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PATTERNS OF DISTURBED CLASSROOM BEHAVIOR--THE NATURE AND MEASUREMENT OF ACADEMICALLY RELATED PROBLEM BEHAVIORS. FINAL REPORT.

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THIS SERIES OF FIVE STUDIES EXAMINED THE NATURE AND ORGANIZATION OF NONTEST, ACADEMIC ACHIEVEMENT-RELATED, CLASSROOM BEHAVIORS FROM KINDERGARTEN THROUGH 12TH GRADE, AND DEVELOPED RATING SCALES THAT A TEACHER CAN EMPLOY TO RELIABLY DESCRIBE THESE BEHAVIORS IN A STANDARD FASHION. RESEARCH INVOLVED NORMAL PUBLIC SCHOOL AND SPECIAL CLASS STUDENTS OF BOTH SEXES. MOST OF THE RESEARCH EFFORT FOCUSED UPON THE MEASUREMENT OF BEHAVIORS FROM KINDERGARTEN THROUGH SIXTH GRADE. BEHAVIORS WERE SELECTED OUT OF TEACHER CONFERENCES, SCALE ITEMS CONSTRUCTED, RATINGS MADE BY TEACHERS, FACTOR ANALYSES PERFORMED, AND BEHAVIORS RELATED TO AGE, SEX, IQ, ACADEMIC ACHIEVEMENT, CLINICAL DIAGNOSIS, ACADEMIC SUBJECT, GRADE LEVEL, SEX OF TEACHER-RATER, AGE AND EDUCATIONAL LEVEL OF PARENTS, SIBLING STATUS, AND RACE OF CHILD. NORMS AND TEST-RETEST DATA WERE OBTAINED, AND COMPARISONS WERE MADE BETWEEN ACADEMIC ACHIEVERS AND NONACHIEVERS, AND BETWEEN NORMAL AND SPECIAL CLASSES. IN ALL, 147 TEACHERS MADE 1,719 RATINGS ON A TOTAL OF 1,546 CHILDREN. THE RESULTING SCALES ARE FEASIBLE TO USE. BOTH THE ELEMENTARY AND HIGH SCHOOL RATING SCALES ARE PRESENTED IN THE APPENDIX. A REFERENCE LIST INCLUDES SIX ITEMS. (AUTHOR)

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PATTERNS OF DISTURBED CLASSROOM BEHAVIOR:

The Nature and Measurement of Academically Related Problem Behaviors

May, 1967

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U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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Introduction

This report describes a series of research studies, the goal being to develop reliable means of describing the overt problem behavior patterns that emerge in the classroom, and which deleteriously affect classroom learning. An inextricable aspect of these studies has been the investigation of how problem behaviors in the classroom are patterned and what they mean. Thus, while attempting to devise tools, it was inevitable that greater understanding about what was to be measured would result.

These studies were motivated by the need for more improved and feasible ways of describing and measuring the behaviors that emerge in the classroom, behaviors that are of concern to teachers because they interfere with learning. Teachers want help and advice regarding handling youngsters in class -- the youngster who teases, or sits and looks out of the window or never seems able to sit still. With increasing frequency, teachers are coming into contact with mental health workers in the schools, and are being asked to report on what the youngster is "doing" in class. When considering classroom groupings, more attention is being placed upon certain facets of behavioral homogeneity, as well as cognitive variables. With the growth of "special education" programs, increasing funds are being spent in developing special classes, the goal of which (hopefully) is to alter behavior so as to make return to normal classes feasible in as short a period of time as possible.

Despite the fact that to carry out the above it is necessary to reliably measure classroom behavior that interferes with learning, little has been done to investigate how youngsters behave in class, how behaviors interrelate, what behaviors are academically relevant and what behaviors are not, and how to feasibly measure these behaviors so that the broader issues can be tackled in a reasonable fashion. How is it possible to design programs to affect something (e.g., behavior) when there is no assurance that what is being described is being described reliably, and that it is relevant to learning!

The rationale underlying these studies has been that any behavior problem is a "problem" when it interferes with adaptation in a particular setting. A "problem" in a classroom is a problem when it can be shown to relate to classroom achievement in a negative fashion. The aim, then, was not to develop clinical, diagnostic devices that might be used in a clinic, nor to devise tools to measure "personality" traits. The aim was to assess what behaviors may deleteriously affect achievement, to see how these behaviors interrelate or pattern themselves, throughout the elementary and high school grades, to develop reliable scales that can be used by teachers to rate these behaviors, and to attempt some initial validation work.

These aims have been achieved, particularly insofar as the scale to measure behaviors during the first six grades is concerned. Greater emphasis was placed here for two reasons. First, earlier work had previously been completed by the principle investigator on a high school scale, this work affording a base upon which to operate which did not exist with the elementary scale. Second, it was felt that there was greater need for a scale to serve the early grades,

grades that comprise the age and academic levels of most youngsters in "special" classes and define the age span wherein classroom problems first emerge. The decision to focus the major emphasis on early grades was felt to be logistically sound.

The final scales deriving from this work are not presented as finished products. It is to be expected that with use, evidence will emerge which will demand revision and/or addition. Similarly, as more knowledge accrues regarding disturbed classroom behavior, it may be necessary to incorporate into the current scales other behavior dimensions not currently being tapped. The present scales however, and especially the elementary grade scale, are now usable by teachers under any circumstances wherein they wish to describe and communicate to others about problem behavior in the classroom, wherein a standard means of description is desired to assess changes in behavior through time, and when a clearly described classroom behavior disturbance pattern is needed in order to define strategies of teacher response to students.

The series of studies to be presented are presented in chronological order. For those interested mainly in the elementary level, Study II may be skipped in reading through the manuscript. Copies of the Items and the scoring profiles are presented in the Appendix. A Manual for the use of the elementary scale has been written and will be submitted to the Office of Education as a separate item.

STUDY I

A Study of the Nature and Organization of Disturbed Elementary Classroom Behavior

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We assume that classroom behavior, insofar as it reflects attitudes and motivations regarding school learning and achievement, is significant and important to educators and professional persons who are involved in the intellectual growth and academic development of the child. Teachers and guidance counsellors are frequently called upon to make reports about or evaluation of how a child is behaving in class. Report card systems often request that the teacher supplement grades with ratings or comments about classroom behavior that purportedly help to explain the grade given. Similar reports of behavior are often requested by professionals outside of the school system who may come into contact with the student. Among teachers, many students have certain behavior "reputations", particularly those students who pose a problem to the teacher. The management of the classroom, with its frequent connotation of maintaining control over the students, is a frequent topic of discussion among teachers. Other behaviors raise rather baffling questions for the teacher,who wishes to understand what the behavior may mean so as to respond appropriately.

With the surge of interest in recent years in "special" education, there has been a heightened focus on disturbed or problem behavior in the classroom. This increased interest can be seen in the rapid development of the profession of school psychology, in publications in the area of academic techniques with atypical children, and in studies dealing with prediction of emotional problems that might interfere with academic success, (e.g., Bower, 1959). The rapid increase in the development of psychological services in schools has focused attention upon early recognition and remediation.

Concern with the problems of the atypical child in the classroom has long been the focus of attention in schools specifically designed to educate atypical children. In such schools, attention is focused constantly upon both the intellectual and emotional status of each child, and the significance of these in relationship to academic development. That "problem" behavior of a child in the classroom may be related to academic success would come as no surprise to those working in this area. Teachers of atypical children are quite aware of the difficulty that problem behaviors present in the classroom situation, whether these be distraction, restlessness, day dreaming, negativism towards the setting, and so on. Despite this awareness and increased interest, however, there are no well-researched "tools" designed to help define and classify disturbed classroom behaviors so that through correlational or longitudinal work it may be possible to examine more carefully the significance of them, or of academic progress as a consequence of special remedial programs. As yet we do not know what constellations or syndromes of classroom behavior exist, nor can we be sure of what particular atypical behaviors deleteriously affect academic success, and to what extent. Probably the effects of anxiety upon academic accomplishment have been most carefully studied (e.g., Sarason, 1960), but beyond this, relatively little has been done. Particular scaling or rating devices have been devised in particular studies, but the breadth of coverage of such descriptive systems have seldom been broad, and we know little of the relationship between one problem behavior and another.

From the practical point of view, increasing funds are being spent these days on establishing special classes for disturbed children. Highly professionalized staffs are attempting to bring to bear highly specialized skills of a therapeutic and educational nature. The teacher is being brought into much closer contact with specialists in the psychiatric, psychological and social work fields. He is being asked to communicate about issues for which his early training did not prepare him. Despite this, no tool is available through which the teacher can reliably describe and communicate about his observations of classroom problem behavior. Those studies which have been done that relate classroom performance or behavior to other variables often have employed tools of a descriptive nature, but the behavior has usually been circumscribed, and the measuring device specifically developed for the particular study with no assurance of valid transferability to other teachers or situations. Also, these measures seldom focus upon problem behavior, and when they do, do not afford description covering the broad spectrum of problem behaviors that confront the experienced special educator daily.

Turning to the work done, designed to develop tools to systematically describe pupil problem behavior and behavior patterns, one can only conclude that ground has barely been broken in the area. Buros' Tests in Print refers to a handful of scales and inventories that purport to assess classroom "adjustment." Examples are the SRA Rating Scale for pupil adjustment (SRA, 1950-1953), Personality Record (Nat. Assoc. of Secondary School Principals, 1941-1958), New York Rating Scale for School Habits (1929), Personal and Social Development Program (SRA, 1956) and the Pupil Adjustment Inventory (Educ. Services Bureau, 1957). With rare exception, these instruments are designed to locate (i.e., rate) pupils at various academic levels on temperamental or school adjustment scale dimensions said to be the important (e.g., courtesy, initiative, sociability, physical health, industry, and so on). The studies leading to tool development are not designed to discover and validate significant dimensions of classroom behavior disturbance, but start out, a priori, with dimensions that, when rated in one extreme, may suggest some problem. Validity or reliability data is not presented, nor is there much attention paid to principles of scale construction. In the main they are suggested as aids to the school or the teacher, considering the paucity of useful instruments employed in the schools for such purposes. Reviews (in the Mental Measurements Yearbooks) of these procedures invariably suggest caution in their use because of the above shortcomings in their development.

It is in the context of a need for a more articulate understanding of the organization of atypical classroom behavior that the present study was carried out. The study is part of an extensive investigation to examine how disturbed classroom behaviors are organized throughout the first 12 grades in both "normal" and "special" classes, to assess the relationship between these behaviors and a variety of variables (e.g., age, IQ, sex, academic achievement, etc.), and to develop a feasible and reliable set of measurement "tools" of use to teachers, school administrators, and other professionals concerned with behavior disturbances in the classroom. The present report describes the results obtained from normal and special classes at the elementary level, results which will subsequently serve as a basis for the development of a measurement device.

SCALE DEVELOPMENT

Two issues have been raised by the increased interest in the special (in the negative sense) child that require examination. The first is: What do we mean by problem behavior? The second is: How can we focus on this behavior in an organized fashion? In approaching the first question, the current investigators work with the assumption that a problem behavior is one which indicates that the child is not meeting the demands of the school as these are defined by the school structure and teacher. Certainly one may raise serious question as to the legitimacy of certain of the demands we frequently make on children (e.g., Holt, 1964). However, short of a revolution in our educational institutions, the present demands are what they are, and the educator speaks of a problem when the youngster exhibits behavior which in the educator's eyes interfere with classroom learning and intellectual growth as currently designed and viewed by the educator. If the teacher is lecturing, and a student consistently looks out of the window, the teacher anticipates a "problem" because the child is not listening to what the teacher is saying, and sees the behavior as omterferomg wotj tje stidemt's learning.

The second issue, once one assumes a problem may be defined as a lack of adaptation to classroom demands, has not been approached to date. In the present study, this involved two steps. The first dealt with specifying behaviors. This was accomplished primarily through meetings with teachers of regular and special classes who focused their attention on the description of the classroom behaviors of the children with whom they work. Weekly small group meetings with seven or eight teachers were held with a total of 72 teachers. Included were 24 teachers of regular public elementary school classes, 16 teachers involved in public school special class programs, and 32 teachers from the various residential treatment units of the Devereux Schools in Pennsylvania. Teachers were encouraged to discuss all classroom behaviors which, in their experience, were "problems" in that they interfered with student learning, and/or were related (in their experience) to academic achievement. The meetings were open and informal. The second step required the selection of an appropriate means of analyzing ratings that eventually would be made. The decision was to apply a factor analytic approach, an approach that would reveal how behaviors cluster or group themselves, and would allow of subsequent analyses relating "factor" scores to other variables. This approach had proved successful in previous studies of maladaptive behavior in children (Spivack and Levine, 1964; Spivack and Spotts, 1965).

Creation of Items

The creation of the behavior rating scale was guided by several factors. The final group of items were to cover a full range of behavior existing in both the regular and special classroom settings, including adaptive as well as maladaptive behaviors. The items were to refer to behaviors that are readily observable by any individual who might work with children in a classroom situation. Each item was to retain as much as possible the actual words used by the teachers to describe the behaviors to be observed. As items were constructed out of the teacher meetings, they were placed on cards and presented to the teachers for discussion in order to make improvements in wording and insure consensus in meaning. Items which were ambiguous or debatable were improved or omitted.

The Final Scale

The elementary school behavior rating scale consisted of 111 items. Some of the items were rated on a 5-point scale dealing with frequency of occurrence, ("How often does the child... make wild guesses when asked a question?") and others were rated on a 7-point scale indicating the degree to which the behavior is true of the child ("To what degree is the child... unable to follow directions?"). The phrasing of some items clearly focused upon the maladaptive aspect of behavior (e.g., "Have to be prodded to get him to complete his work"), while others were stated in the adaptive sense, (e.g., "Able to apply what he has learned to a new situation"). The range of the scales was from "Never" or "Not at all", to "Very frequently" or "Extremely."

Scale items covered a broad spectrum of behaviors, including amount and quality of verbalization, degree and quality of participation, social behavior with peers and teachers, obstreperous and negative behavior, withdrawn behavior, attentiveness, anxiety or worry, etc. A variety of other behaviors were also included without a clear expectation of how they would "fit" with other behaviors. In all cases, items were included when in the teachers' judgments they were disruptive of learning or felt to be related to academic and/or intellectual growth.

PROCEDURE

Subjects

The total sample of ratings used in statistical analyses was 579, of which 351 were of boys and 228 of girls. Included were 327 ratings, 225 of boys and 102 of girls in special classes for the emotionally disturbed or in residential treatment. Of the remaining 252 ratings, 126 were of boys and 126 of girls in the regular school program of a local public elementary school.

The normal elementary school children were selected by sex, grade and IQ. Seventy-five (approximately one-half boys and one-half girls) were included from each of combined grades 1 and 2, 3 and 4, and 5 and 6, with the addition of 30 boys and girls from kindergarten. At each combined grade level, three groups were selected on the basis of IQ with 25 children having IQ's below 100, 25 with IQ's between 100 and 115 and 25 above IQ 116. The mean age for the elementary group was 9.2, and the mean IQ, 108. One-half of the ratings were of children in Language Arts, and one-half in Arithmetic. Where possible, each child was rated in both subject areas by a different teacher. Whenever the child had the same teacher for both subjects, he was then rated in only one.

The abnormal sample was selected on the basis of placement in a special educational setting, and, for the most part, the children were in ungraded classes including instruction from the readiness (pre-school) through fourth or fifth grades. The mean age of these children was 11.9 years with a standard deviation of 2.6 years. The IQ level for the entire abnormal group ranged from 50 to 133 with a mean and standard deviation of 87 and 16.3 respectively.

The children in both public school special classes and the Devereux Schools had been placed for a variety of educational, emotional and social difficulties, and varied in diagnosis and degrees of pathology. The six diagnostic categories employed to study the relationship between clinical diagnosis and behavior factors were: Chronic brain syndrome (CBS) without qualifying phrase, N=53; CBS with behavioral reaction, N=46; Schizophrenic reaction, childhood type, N=17; Psychoneurotic reaction, N=44; Passive aggressive personality, N=50; and Adjustment reaction of childhood, N=35.

Rating Procedure

The raters were 20 teachers in the regular elementary school and 29 teachers working with the abnormal group of children. A short training period was held to acquaint the teachers with the rating procedures. The training period emphasized that the rater should consider recent and current behavior, use the "average" child in the "normal" classroom as a guideline, base the ratings on personal experience with the child, deal with each item independently rather than make an effort to describe a consistent behavioral picture, and avoid interpretations of "unconscious" motives or feelings. Each teacher was asked to select a child in his class as a practice rating. Following this, a second meeting was held to discuss the ratings made in order to deal with questions or other problems which occurred in this preliminary exercise. The goal of the training procedure was to attain consistency of approach and to aid the raters in the task of focusing directly upon the actual behavior of their children. The raters were instructed to follow closely the Rating Guide which was included as the front sheet of the Scale, which repeated the instructions for rating mentioned above.

Additional Variables

Data on several additional variables were included in the statistical analyses in order to better evaluate the meaning of the factors developed. Each item and final factor that emerged, for both the normal and abnormal groups, were then related to these variables.

For both groups, data on age, sex and IQ[1] were obtained. In the normal group, two class grades were available in both the Language Arts and Arithmetic areas: an achievement grade, based upon the grade level expectancy considering the age of the child, and an effort grade, reflecting the effectiveness with which the child is achieving in relation to his own ability group. Data for the abnormal group included diagnosis, and an achievement grade for one of the abnormal groups within the Devereux Schools, wherein such data were available and reasonably equivalent in meaning to the grades given in the normal public schools.

Statistical Analyses[2]

Data analyses were accomplished in three major steps. The factor analyses of items for each group to obtain factors employed the techniques of earlier work by the principal investigator, (Spivack & Levine, 1964), and reference can be made to this earlier work for details. In brief, a Pearsonian correlation matrix of all items was factored by an iterative procedure, beginning with conservative estimates of the communalities and of significant dimensionality. The normal promas criterion was employed in rotation to determine an objective approximation to the best simple structure.

In the second step, in order to assess the properties of the item-set for the normal and abnormal data separately, beta weights were obtained by the formula $B=E' (E'E)^{-1}$, where E denotes the equamax factor matrix. A separate rotation to determine the best orthogonal simple structure had to be accomplished employing the normal equamax criterion.

For both groups, separately, these data were used to define the emerging factors. In each case, an item was considered for inclusion when its promax loading was .30 or better[3], and when its beta weight indicated that it was making a greater contribution to this factor than to other factors. Following these procedures, 13 interpretable factors emerged in each group, 12 common to both, one factor that emerged only in the normal group, and one factor that emerged only in the abnormal group (see below).

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[1] Individually tested IQ's were available on the abnormal Ss. Group IQ's were available on the normal Ss, with the exception of the kindergarten group.

[2] The authors wish to acknowledge the assistance of Dr. David Saunders in planning and carrying out the various statistical procedures and computer work.

[3] In a few instances, items with smaller loadings were retained when other evidence seemed to justify retention (e.g., the beta, the correlations of the item with other variagles).

From these data, the third step in data analysis was taken. Items that best defined the 12 factors common to both the normal and abnormal groups were selected. To accomplish this, not only were the promax loadings and beta weights utilized in making judgments, but only items were retained to define the final factor which had similar correlations with age, IQ, sex and academic achievement[4]. The data from the items best defining these 12 common factors, plus the two factors which were not common, were returned to the computer. Raw score factor scores were determined for each factor for both the normal and abnormal groups, and these scores were related to IQ, sex, age, academic achievement and clinical diagnosis. The mean scores of the normal and abnormal groups were also compared. Either correlational or analysis of variance procedures were employed, depending upon the variable.

RESULTS

For ease and clarity of presentation, each of the 12 factors that were similar in both groups will be described one at a time. In each instance the items best defining the factor in each group will be presented in table form and discussed. Following this discussion, the factor raw score correlates of the final common factor will be presented. Finally, data on the two factors, not common to both groups, will be presented, along with their raw score correlates.

Creative-Initiation (Verbal)

As Table 1 suggests, there is a striking similarity between the results of the normal and abnormal groups. Items tap the extent to which there is an active, positive contribution to the classroom learning situation. In most instances this contribution involves verbalization.

In general, correlations between the factor raw scores and other variables indicate that the behaviors subsumed under this factor have positive implications for learning. In the abnormal group factor scores correlated significantly with achievement grades ($r=.26$; $p=.01$), but did not correlate with IQ. In the normal group the correlations of factor scores with achievement and effort grades were .31 and .41 respectively. Since IQ correlated significantly with factor scores in the normal group (.31), the effect of IQ was partialled out statistically. The partial correlations with achievement and effort grades were .13 and .30 respectively, both significant.

The groups differed in their mean scores ($F=8.6$; $p=.01$). Unexpectedly, however, the abnormal group achieved higher scores. This may reflect the fact that special class groups are smaller in size, the teacher works more individually with each student, and the teacher may encourage this type of behavior.

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[4] These correlations with individual items are not included to conserve space. Information regarding these correlations can be obtained by writing to the authors.

Table 1

Rotated Promax Loadings on Factor Labeled
"Creative-Initiation (Verbal)"

Item No.	Normal Promax	Abnormal Promax	Description of Items[a]
6	.48	.40	Bring things which relate to classwork
15	.50	.47	Tell stories or describe things in an interesting fashion
18	.31	.42	Initiate classroom discussion
41	.48	.51	Introduce into class discussion experiences which relate to what is going on in class

[a] The item descriptions are a shortened form of most of the items, although they include the essence of the items as used in the scale.

The analysis of variance for diagnosis was significant (F=3.6; p=.01), highest scores obtained by psychoneurotic youngsters, and youngsters with adjustment reactions. Lowest scores were obtained by youngsters diagnosed as schizophrenic and CBS with behavior reactions. These results indicate that the type of behavior being tapped by this factor tends to typify the relatively less disturbed youngster in the special classes, a finding consistent with the positive correlations between factor scores and achievement measures.

Scores were unrelated to sex in the abnormal group, but tended to be higher in the females in the normal group (r=.13; p=.05). Factor scores were unrelated to age in both groups.

In summary, the results indicate that behavior tapping the tendency to become constructively and personally involved in classroom work is significantly related to academic accomplishment, aside from the issue of intelligence. In special classes such behavior is more likely to occur in the more mildly disturbed youngster. While the explanation offered for the direction of the group difference in mean factor scores remains ad hoc, it seems the most reasonable explanation considering the other findings, and the likelihood that with smaller classes and more individual attention paid to each student, more active, positive and initiating classroom behavior will emerge.

Classroom Disturbance

This dimension taps the extent to which behavior is active, social (though inappropriate), and disruptive or obstreperous, behavior which requires the teacher to impose controls and structure, (see Table 2).

The data suggest that such behavior is inimical to productive learning.

Table 2

Rotated Promax Loadings on Factor Labeled "Classroom Disturbance"

Item No.	Normal Promax	Abnormal Promax	Description of Items
8*[a]	.37	.35	Act like the class "clown"
25	.41	.39	Have to be reprimanded or controlled by teacher
27	.57	.51	Torment or tease classmates
29	.37	.45	Annoy or interfere with work of peers in class
32*	.49	.29	Break classroom rules, destructive
77	.27	.41	Quickly drawn into noise-making or talking to others

[a] Items in this and subsequent tables with an asterisk were not included as part of the final common factor for both groups because its loading and/or beta were satisfactory in only one of the two groups, its correlations with age, IQ, sex and academic achievement were dissimilar to those of the other factor items, or its correlation with another factor item was too high indicating a mere duplication.

It is also quite likely to disrupt the learning of other students. In the abnromal group, factor scores were negatively correlated with achievement grades (r=-.38; p=.01). There was no relationship to IQ. In the normal group factor scores were significantly related to both achievement and effort grades (r=-.23 and -.31 respectively). Since IQ was significantly related to factor scores in this group (r=.24; p=.01), IQ was partialled out. The resulting partial correlations with achievement and effort grades were .13 (p=.05) and .11 (NS) respectively.

The abnormal group had significantly higher factor scores (F=26.7; p=.01). The analysis of variance for diagnosis in the abnormal group was of borderline significance (F=2.2; p=.06), relatively high scores achieved by the psychoneurotic and passive-aggressive youngsters, and certain youngsters with a diagnosis of CBS behavioral reaction. In both groups, boys obtained higher scores than girls (abnormal group r=-.22; normal group r=-.33). In the abnormal group, this behavior tended to diminish with increase in age (r=-.36; p=.01), while in the normal group factor scores did not relate to age.

In summary, the results clearly indicate that actively disruptive and obstreperous classroom behavior tends to occur in youngsters who are achieving relatively poorly. In special classes such behavior is more typical of boys than girls, though it tends to diminish with age.

Comprehension

As Table indicates, the items defining this factor in both groups are quite similar, suggesting behavior that indicates the degree to which the child understands what is transpiring in the classroom and remembers it.

Table 3

Rotated Promax Loadings on Factor Labeled "Comprehension"

Item No.	Normal Promax	Abnromal Promax	Description of Items
23	.34	.43	Get the point of what he reads or hears class
47*	-.52	-.45	Forget what he learned the day before
92	.29	.52	Able to apply what he has learned to a new situation
96	.43	.48	Likely to know the material when called upon to recite in class

It is not surprising to find that such behavior has positive implications. In the abnormal group factor scores were positively related to achievement grades (r=.42; p=.01). There was no relationship with IQ. In the normal group factor scores were significantly related to both achievement and effort grades (r=.49 and r=.61, respectively). Since IQ correlated with factor scores (r=.54; p=.01), the effect of IQ was partialled out statistically. The resulting correlations with achievement and effort grades remained significant at the .01 level, (.27 and .50 respectively). The abnormal group achieved significantly lower scores than the normal group (F=4.1; p=.05). The difference between diagnostic groups was not significant, nor were the correlations of factor scores with age and sex.

The results indicate that behaviors which reveal that the youngster generally has an understanding of what is going on in class, and is willing and able to apply that information to the learning situation, is achieving successfully, aside from the issue of IQ. It is particularly interesting to note that such behavior was uncorrelated with IQ in the abnormal group, and that different diagnostic groups were not strikingly different. The suggestion of both these findings is that a variety of disturbances may effect this dimension of behavior as it appears in the classroom, and that this behavior cannot merely be ascribed to lack of intellectual competence in other situations.

Slowness in Work

As indicated by Table 4, the items defining this factor are identical for both groups. The item grouping taps the rate at which the child moves along in his work. Slowness is revealed in the frequency with which work is not completed, the youngster has to be prodded by the teacher, and the frequency with which he moves on to something new without having finished a previous task.

Table 4

Rotated Promax Loadings on Factor Labeled "Slowness in Work"

Item No.	Normal Promax	Abnormal Promax	Description of Items
4	.44	.52	Have to be prodded to complete his work
7	-.51	-.46	Complete his classroom work
12	.43	.59	Take excessive time to complete assignments
52	.32	.32	Not finish one thing before starting another

The relationship between factor scores and achievement variables is clear in both abnormal and normal groups. In the abnormal group the slow worker achieves significantly less ($r=-.52$; $p=.01$) than children receiving lower factor scores. Factor scores did not relate to IQ. In the normal group factor scores were related to both achievement and effort grades ($r=-.39$ and $-.53$, respectively.) When the correlations with IQ ($r=-.34$; $p=.01$) was partialled out, the correlations with achievement and effort grades remained highly significant at the .01 level ($r=-.26$ and $-.45$ respectively).

The difference between groups was highly significant ($F=30.4$; $p=.01$), with the abnormal group showing a far greater amount of this behavior. There was no difference between diagnostic groups. In both groups boys obtained higher scores than girls (abnormal $r=-.18$; $p=.01$; normal $r=-.23$; $p=.01$), and in the abnormal group the behavior diminished with age ($r=-.16$; $p=.01$). The relationship to age was insignificant in the normal group.

In summary, the results indicate that inability to work at an acceptable rate is quite characteristic of most youngsters in a special class, aside from the issue of IQ and specific diagnosis, and that the more slow the pace the lower the achievement. Such behavior tends to be more typical of boys than girls, but may diminish with increase in age in the special class setting.

External Reliance

As indicated by Table 5, the items defining this factor in each group overlap, although they are not identical. In both instances, however, the items suggest a dimension which taps the degree to which there is dependency upon external direction or structure, or conversely the inability to make independent decisions and take independent action without the assistance of others (e.g., the teacher).

Table 5

Rotated Promax Loadings on Factor Labeled "External Reliance"

Item No.	Normal Promax	Abnormal Promax	Description of Items
62	.20	.42	Look to see how others are doing something before he does it
75	.49	.30	Reliant upon teacher for direction
86	.34	.21	Needs precise directions to proceed successfully
90*	-.03	.24	Ill at ease when expressing himself in class
108*	-.10	.31	Resist correcting his work
109	.39	.39	Have difficulty deciding what to do when given a choice between two or more things

Although factor scores were unrelated to IQ in the abnormal group, achievement grades were negatively related to factor scores (r=-.32; p=.01), indicating that the greater the need for external reliance the less chance of classroom accomplishment. In the normal group factor scores were negatively related to both achievement and effort grades (r=-.52 and -.54 respectively). When the correlation between factor scores and IQ (r=-.51; p=.01) was partialled out, the correlations between factor scores and achievement and effort grades remained highly significant (r=-.34 and -.41, respectively).

The abnormal group obtained significantly higher factor scores (F=11.9; p=.01), but there was no significant difference between different diagnostic groups. Boys tended to get higher factor scores than girls both in the abnormal (r=-.20; p=.05) and normal (r=-.39; p=.01) groups. The older the child, the lower was the factor score obtained both in the abnormal (r=-.20; p=.05) normal (r=-.29; p=.01) groups.

In summary, the results clearly indicate that youngsters who are overly reliant upon others in order to function, or who, conversely, find it difficult to make independent decisions, also tend to receive lower grades in various aspects of academic achievement. There was more of this behavior in special classes than in normal classes, but in both groups this behavior tended to be more frequent in boys than girls, and also tended to decrease with increase in age.

Externalization of Blame

As suggested by Table 6, there is a substantial overlap in specific items which define this factor in both groups. This dimension taps the tendency to blame external circumstances (e.g., teacher, the work), with the implication of ascribing the source of a problem or frustration to externals without recognition of the self as a determining factor.

Table 6

Rotated Promax Loadings on Factor Labeled "Externalization of Blame"

Item No.	Normal Promax	Abnormal Promax	Description of Items
3	.34	.54	Say that teacher doesn't help him enough
64	.31	.32	Complains teacher never calls him first
82*	.28	-.08	Critical in negative way of classmates' opinions
88	.34	.19	Prone to blame teacher or external circumstances when things don't go well
97	.49	.27	Quick to say work assigned is too hard

In the abnormal group the greater the tendency toward externalization, the lower the avhievement grade ($r=-.37$; $p=.01$). Factor scores were not related to intelligence, sex or age. In the normal group factor scores were negatively related to both achievement and effort grades ($r=-.38$ and $-.25$, respectively). After partialling out the relationship between factor scores and IQ ($r=-.21$; $p=.01$), the relationship of factor scores to achievement and effort grades both remained significant at the .01 level ($r=-.32$; and $-.18$) respectively.

The difference between groups was highly significant ($F=104.7$; $p=.01$), the abnormal group obtaining much higher scores. The analyses for diagnosis was also significant ($F=2.5$; $p=.05$), suggesting mainly that externalization of blame most typifies youngsters diagnosed CBS with behavioral reaction, and least typifies schizophrenics. In the normal group factor scores were not related to sex, but externalization behavior tended to diminish with increase in age (r=-.18; p=.01). Factor scores were unrelated to age and sex in the abnormal group.

Summarizing, the results indicate that the tendency to place blame for things on externals is more typical of youngsters with relatively low achievement. Considering the highly significant group difference in factor scores, it would appear that the behaviors tapped by this factor reflect a quality of classroom behavior that is quite typical of youngsters for whom special class assignment has been made and who suffer from one or more emotional or maladjustment problems.

Inconspicuousness

The items (see Table 7) defining this factor in each group are identical. They reflect the extent to which the youngster is inconspicuous in class, unresponsive and hard to get to know, or seems to fade into the wallpaper.

Table 7

Rotated Promax Loadings on Factor Labeled "Inconspicuousness"

Item No.	Normal Promax	Abnormal Promax	Description of Items
83	.41	.27	Generally unresponsive, hard to get to know
91	.62	.26	Slow in physical movements
102	.39	.62	Make himself inconspicuous in class

In the abnormal group, factor scores were not significantly related to academic achievement. In the normal group the more the youngster tended to be inconspicuous, the lower his achievement and effort grade tended to be (r=-.29 and -.17 respectively). Pattialling out the relationship between IQ and factor scores (r=-.16; p=.05), the relationship between factor scores and achievement grades remain significant (r=-.24; p=.01), but the correlation with effort grades failed to reach a level of statistical significance.

The difference between groups in factor scores was not significant, nor was the analysis of variance which compared different diagnostic groups. In neither group were the correlations between factor scores and sex and age significant.

"Inconspicuous" behavior is often viewed as a "problem" by the teacher, when displayed by school age children. However, it appears that while in the normal classroom situation such behavior is related to achievement, this is not the case in the abnormal setting, and normal and special classes are not strikingly different in the frequency with which such behavior is found. While ad hoc in nature, one might explain the relationship with academic achievement in the normal group on the basis that, in normal classroom situations, grades may be more dependent upon certain types of active classroom behaviors which are the antithesis of inconspicuousness. In any case, the utility of this factor in any scale of disturbed classroom behavior remains in doubt.

Inattentive-Withdrawn and Irrelevant Responsiveness

These two groupings were considered as separate entities because they emerged as separate factors in the analysis of the normal data, even though they combined in the abnormal data to define one factor. As Table 8 and 9 indicate (by the relative absence of asterisk items), the abnormal factor almost totally encompasses the items that define these two separate factors in the normal group.

The Inattentive-Withdrawn group (see Table 8) taps the extent to which there is inattention, loss of contact with what is going on in class, and perhaps daydreaming. The Irrelevant Responsiveness group (see Table 9) describes the extent to which the youngster responds in class or makes statements which are irrelevant or highly personalized. In the latter instance, there is an active (even interrupting) component, albeit "off the track". This is in contrast to the more retiring quality of the Inattentive-Withdrawn behaviors. Nevertheless, it is easy to understand how, if one is inattentive or oblivious, one's response may be irrelevant when called upon to respond to the outside world.

Table 8

Rotated Promax Loadings on Factor Labeled "Inattentive-Withdrawn"

Item No.	Normal Promax	Abnormal Promax	Description of Items
37	.33	.23	Quick to lose attention when teacher explains something
40	.54	.34	Makes you doubt whether he is paying attention
70	.31	.40	Oblivious to what is going on in class

Considering the inattentive and withdrawn behavior firs, factor scores were negatively related to achievement in abnormal group (r=-.34; p=.01). There was no relationship with IQ. In the normal group factor scores correlated negatively with both achievement and effort grade (r=-.36 and -.46, respectively). Partialling out the correlation with IQ (r=-.40; p=.01), the correlations between factor scores and achievement and effort grades remained significant at .01 level (r=-.18 and -.35 respectively).

Table 9

Rotated Promax Loadings on Factor Labeled "Irrelevant Responsiveness"

Item No.	Normal Promax	Abnormal Promax	Description of Items
30	.44	.21	Tells stories which are exaggerated and untruthful
31	.49	.39	Gives an answer which has nothing to do with the question being asked
35[a]	.30	-.02	Interrupt when the teacher is talking
46*	.33	-.03	Call out answers without being called upon
68	.34	.49	Make irrelevant remarks during a classroom discussion

[a] Item 35 was retained despite its low abnormal loading since this factor very clearly emerged in the normal group, along with the Inattentive-Withdrawn factor, and its content seemed relevant to the factor label.

The abnormal group displayed significantly more of this behavior (F=21.6; p=.01), although the analysis of variance for diagnosis did not indicate that one diagnostic group exhibited significantly more of this behavior than any other. In neither group were factor scores related to sex, but in the abnormal group factor scores diminished with increase in age (r=-.28; p=.01).

In summary, the data suggests that, aside from the issue of IQ, inattentive and/or withdrawn behavior is related to lack of academic accomplishment, and that one is much more likely to come upon such behavior in special classes. It is also interesting to note that such behavior, in and of itself, does not typify one diagnostic group of problem youngsters more than another.

Considering the "Irrelevant Response" factor, the more such behavior emerged in the abnormal group, the lower the achievement grade obtained (r=-.45; p=.01). There was no relationship to IQ. In the normal group, factor scores were related both to achievement and effort grades (r=-.30 and -.31 respectively). After partialling out the relationship of factor scores with IQ (r=-.25; p=.01), the correlation between factor scores and achievement and effort grades remained significant at .01 level (r=-.20 and -.23 respectively).

The analysis of variance for group difference in means was highly significant (F=96.4; p=.01), the abnormal group displaying a great deal more of this behavior. Within the abnormal group, the analysis of variance for diagnosis was significant (F=2.6; p=.05), high scores most typifying the passive-aggressive and psychoneurotic cases with lowest scores typifying schizophrenic and adjustment reaction cases. Factor scores were not significantly related to sex, but in the abnormal group scores tended to diminish with increase in age (r=-.32; p=.01).

The results indicate that while the tendency to irrelevantly intrude during class may occur in both the normal and special classroom situation, this behavior is much more frequent in the special class situation, and that it occurs with youngsters who are lower achievers. The results also indicate that such behaviors usually occur in poorly self-controlled passive-aggressive and psychoneurotic youngsters, and does not usually reflect schizophrenic thinking. Of all diagnostic groups studied, the schizophrenic group obtained the lowest mean score. This may also reflect the fact that behaviors that comprise this factor involve active verbalization.

Achievement Anxiety

The data in Table 10 suggests that, for both groups, items tap anxiety concerned with achievement demands, and an accompanying element of upset over the inability to meet academic expectations. The overlap items tap proneness to upset and worry, and open disturbance over being "right" and doing well in both the normal and abnormal groups. While in the abnormal group the factor tended to focus more on specific concern regarding tests and grades, the normal factor revealed a more generalized classroom situation anxiety. The final common item grouping selected to represent this factor combines both elements.

Table 10

Rotated Promax Loadings on Factor Labeled "Achievement Anxiety"

Item No.	Normal Promax	Abnormal Promax	Description of Items
33*	.46	.12	Get angry or upset when he is having difficulty with school work
53	.42	.49	Get openly disturbed about scores on a test
58	.57	.47	Show worry or get anxious about knowing the "right" answer
76*	-.02	.54	Concerned about getting good grades
85	.39	.51	Outwardly nervous when tests are given
87	.43	.20	Sensitive to criticism or correction
90*	.28	.01	Ill at ease when expressing himself in class

In the abnormal group, factor scores were not related to academic achievement. In the normal group, however, factor scores were significantly related to both achievement and effort grades ($r=-.27$ and $-.26$ respectively), indicating that the higher the anxiety the lower the achievement. When the relationship between IQ and factor scores ($r=-.20$; $p=.01$) was partialled out, the resulting correlations remained significant at the .01 level ($r=-.20$ in both instances).

The group difference in factor scores was highly significant ($F=71.2$; $p=.01$), the special class groups obtaining higher scores. The analysis of variance for diagnosis was not significant, nor were the correlations between factor scores and age and sex in the abnormal group. In the normal group, scores tended to diminish with increase in age ($r=-.18$; $p=.01$).

The normal group data clearly support the notion that achievement anxiety may have a deleterious effect upon academic accomplishment. This is supported by the finding that the abnormal group obtained very much higher factor scores than the normal group. The absence of relationship between factor scores and achievement in the abnormal group may reflect the effect of small classes, and the understanding of and desire to handle an individual child's anxiety on the part of the special class teacher. It is likely, for instance, that the special class teacher is more prone to modulate classroom pressure so as to minimize the effect of anxiety, or attempts to avoid its emergence as a disruptive influence upon achievement by playing down the importance of good grades.

Need for Closeness With the Teacher

This factor taps the extent to which children, whether normal or abnormal, like to be close to, seek out, and offer to do things for the teacher. The role of the teacher as a source of attention is emphasized in both groups as indicated in Table 11.

The expectation that this type of behavior may be related to positive achievement is supported in the abnormal group. In the latter group, factor scores were related to achievement ($r=.26$; $p=.01$). Factor scores were not related to IQ. In the normal group, factor scores were not significantly related to achievement and effort grades.

The difference between the normal and abnormal groups was significant ($F=8.9$; $p=.01$), the abnormal group displaying significantly more of this behavior. The analysis of variance for diagnosis was not significant, although it was interesting to note that the schizophrenic children receive markedly low scores, a finding consistent with clinical experience. For both groups, girls obtained significantly higher scores on this factor than boys (normal $r=.34$; $p=.01$; abnormal $r=.22$; $p=.01$). In the abnormal group this behavior tended to diminish with age ($r=-.24$; $p=.01$), but there was no relationship with age in the normal group.

In general, the results suggest that the need for closeness or rapport with the teacher more frequently occurs in special classes, and that in such classes such behavior is positively related to achievement. It is likely that such behavior is more feasible in special classes considering the fact that classes are smaller and the teacher can pay more individual attention to each student. Considering the implicit dependency element in this factor, it is not surprising that girls tend to display this behavior more than boys in both normal and special class situations and that, at least in the abnormal class group, such behavior is more typical of the younger child.

Table 11

Rotated Promax Loadings on Factor Labeled "Need Closeness to Teacher"

Item No.	Normal Promax	Abnormal Promax	Description of Items
1*	.34	.08	Report classmates' misbehavior to teacher
20	.39	.56	Seek out the teacher before or after class for personal conversation
38	.62	.42	Offer to perform unsolicited chores for the teacher
98[a]	-.04	.46	Friendly rather than distant in relationship with teacher
106	.42	.49	Likes to be close to teacher

[a] Item 98 was retained despite its low loading in the normal group because of its "fit" in the abnormal data, the relevance of its content to the overall factor, and previous work indicating its place in such a factor (Spivack, 1964).

The positive relationship between factor scores and achievement in the abnormal group is interesting in one other respect. Rather than reflect immature aspects of dependency, which might have revealed themselves in a negative relationship with academic achievement, the positive relationship findings support the notion that positive rapport between student and teacher is an important ingredient in special classwork, and that the ability or willingness of the student to become engaged in a positive relation is a good prognostic sign.

Need Achievement Recognition

Table 12 presents the items tapping the degree of inappropriate need for recognition in the academic areas. The emphasis is upon quantity and speed rather than quality, with showing off and producing "more" being the criteria for "success". The need to be noticed is of greater importance than the involvement in the work assigned.

Table 12

Rotated Promax Loadings on Factor Labeled "Need Achievement Recognition"

Item No.	Normal Promax	Abnormal Promax	Description of Items
10	.49	.38	Want to show off or impress others
17*	.23	.02	Monopolize classroom time, cannot share time or let others talk
43	.47	.41	Try to outdo classmates by producing more in quantity
39*	.15	.43	Rush through work and say "I'm done"
51	.22	.35	Claim he is doing better than he is

Factor scores were not significantly related to the achievement criteria in either group. There was a significant difference between the groups in mean factor score (F=80.1; p=.01), with children in the special classes displaying considerably more of the behavior tapped by this factor. The difference between the diagnostic groups was also significant (F=2.3; p=.05), with the psychoneurotic and passive-aggressive children obtaining high scores, and the schizophrenic and CBS without behavior reaction children obtaining relatively low scores. In the normal group, boys displayed significantly more of this behavior than girls (r=-.19; p=.01), but there were no sex differences in the abnormal group. In both groups, factor scores diminished with increase in age (abnormal r=-.24; p=.01; normal r=-.17; p=.05).

The results indicate that while inappropriate need for achievement recognition more frequently occurs in special classes, the frequency with which such behavior occurs is not significantly related to actual academic accomplishment within the normal and special class setting. Thus, while such behavior may be indicative of a certain type of maladjustment, (e.g., psychoneurotic or passive-aggressive), the specific relationship between this behavior and actual academic accomplishment remains in doubt.

Impatience

This factor, presented in Table 13, emerged only in the normal group. The items are concerned with an inappropriate drive for completion which stresses a disregard for the need to understand the directions and for neatness, and reveals a resistance to going over work. There is an inability to return to a piece of work once it is considered "finished". These behaviors were interpreted as involving an underlying impatience, or need for rapid completion or "closure" in academic work.

Table 13

Rotated Loadings on "Normal" Factor Labeled "Impatience"

Item No.	Normal Promax	Abnormal Promax	Description of Items
2	.33	---	Start working on something before getting the directions straight
39*	.55	---	Rush through work and say "I'm done"
94	.48	---	Sloppy in his work
108	.18	---	Resists correcting his work

Despite the fact that this factor did not emerge in the abnormal group factor analysis, scores on this behavior grouping were significantly related to academic achievement in the abnormal group (r=-.44; p=.01). Factor scores were not related to IQ in the abnormal group. In the normal group, factor scores were related to both achievement grades and effort grades (r=-.30 and -.36, respectively). When the correlation with intelligence (r=-.34; p=.01) was partialled out, the relationship between factor scores and achievement and effort grades remained significant (r=-.14, p=.05; r=-.22; p=.01, respectively).

The abnormal youngsters as a group obtained significantly higher factor scores than the normal (F=28.0; p=.01). There was no significant difference between different diagnostic categories. For both groups, the behavior was displayed more by boys than by girls (abnormal r=-.17, p=.05; normal r=-.19, p=.01). In the abnormal group this behavior diminished with increase in age (r=-.24; p=.01), but the relationship to age in the normal group was not significant.

The results would support inclusion of this factor in any tool to assess disturbed classroom behavior. Such behavior occurs significantly more frequently in special classes, and the more it occurs the lower the degree of academic accomplishment. It is more characteristic of boys than of girls, and very possibly diminishes with increase in age.

Disrespect-Defiance

This factor dimension (see Table 14) taps the extent to which classroom behavior is characterized by open disrespect for or resistance against the academic setting. This factor emerged only in the factor analysis of the abnormal data, probably reflecting the relative infrequency with which such behavior occurs in the normal classroom setting, and the consequent skewed distributions for the scores in the normal group.

In the abnormal group, the more of this behavior the lower the achievement

Table 14

Rotated Promax Loadings on "Abnormal" Factor Labeled "Disrespect-Defiance"

Item No.	Normal Promax	Abnormal Promax	Description of Items
16	---	.50	Speak disrespectfully to teacher
19	---	.45	Act defiant, will not do what he is asked to do
22	---	.22	Make derogatory remarks about the subject being taught
32	---	.31	Break classroom rules, destructive

grade, (r=-.45; p=.01). There was no correlation with IQ. While the factor did not emerge from the normal group data, scores were significantly related to both achievement and effort grades (r=-.29 and -.24 respectively). When the correlation of factor scores with IQ (r=-.23; p=.01) was partialled out statistically, the relationship with achievement and effort grades remained significant at the .01 level, (r=-.20 and -.18 respectively).

The abnormal group displayed significantly more of this behavior than did the normal group (F=77.2; p=.01). The analysis of variance for diagnosis was not statistically significant, although the ordering of the means of the different diagnostic groups was consistent with clinical experience (e.g., high scores obtained by passive-aggressive youngsters, low scores obtained by schizophrenic youngsters). In both groups boys obtained significantly higher factor scores than girls (abnormal r=-.20, p=.05, normal r=-.24, p=.01). Factor scores were not related to age in the normal group, but the behavior tended to diminish with increase in age among the abnormal youngsters (r=-.17; p=.05).

The results suggest that defiant-resistive classroom behavior is not only more typical of youngsters in special classes, but is related to relatively poor academic accomplishment in both normal and special class settings. Despite the emergence of this factor only in the abnormal group, the inclusion of these items as a factor in a scale find justification.

Factor Intercorrelations

Considering the consistency of the relationship between each of the factors and academic achievement, and in the normal group with IQ, as well as the fact that the factor analyses did not employ an orthogonal rotation, correlations between the raw score factor scores would be expected. The factor intercorrelations were examined with the thought that behaviors tapped by certain of the factors may intercorrelate and thereby suggest a broader family of behavior than is represented by any one factor.

Examination of the intercorrelations presented in Table 15 suggests that this is the case. Several factors correlated with each other in a consistent fashion in both the normal and abnormal groups. These factors include the display of obstreperous and disturbing behavior (Factor 2), slowness in getting to and completing work (Factor 4), placing blame upon others for lack of success (Factor 6), the tendency to respond with irrelevant answers and to make irrelevant remarks during class (Factor 9), impatience with the work assigned (Factor 13), and disrespectful and defiant behavior toward the teacher (Factor 14). This cluster of behaviors focuses mainly ypon what might clinically be termed "acting out" or poorly self-controlled behavior. It is not surprising that slow working youngsters engage in behavior which would interfere with their ability to complete the work assigned in a reasonable amount of time. The tendency to blame others when things do not go well and to claim that the work is too difficult correlated highly with each of the other more overt acting out behaviors. The implication is that the poorly self-controlled child needs to view his school difficulties as eminating from "out there". This child is unable to deal with the expectations made of him, and views problems and frustrations as originating with others or circumstances.

There is a second, smaller cluster of factors which includes the tendency to miss the point and/or quickly forget what is taught (Factor 3), the need for precise directions and difficulty in making independent choices (Factor 5), and the tendency to be inattentive and/or withdrawn (Factor 8). In contrast to the previous grouping, which involves active, socially involved, though academically inappropriate behavior, the second grouping involves behaviors that appear more intimately related to inability to learn and attend, and inability to actively initiate a course of action without help. While the first grouping probably calls forth management-control teacher behavior, the second reflects a dependency upon the teacher in the learning situation and probably calls forth supportive and helping teacher behaviors.

While frequently spoken of as a significant parameter of classroom functioning, achievement anxiety factor scores did not fall within either factor grouping. In both the normal and abnormal groups high anxiety was associated with external reliance (Factor 5) and the tendency to externalize blame when problems arise (Factor 6). The suggestion is that, in the elementary grades, anxiety and the tendency toward upset under pressure are greatest in youngsters who perceive academic success and personal well-being as dependent upon what others (e.g., the adult, teacher) might do or not do, rather then dependent upon their own actions and under their own control.

SUMMARY and CONCLUSIONS

With the ultimate goal of developing a tool to reliably measure academically relevant classroom behavior, the present study was done to discover how a large pool of problem behaviors are organized in both normal and "special" elementary classes, how these behaviors relate to achievement and other selected variables, and how normal and special class youngsters may differ in their classroom behavior.

Table 15

Intercorrelations of Raw Score Factor Scores for Both Normal and Abnormal Groups[a]

Factors	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Creative initiation		-36	48	-14	-22	04	-42	-31	07	07	31	40	-11	04
2. Classrm-disturb.	-04		-08	55	24	57	-30	21	71	20	09	52	59	75
3. Understand-remem.	55	-24		-31	-53	-14	-29	-23	-23	-12	11	-20	-25	-08
4. Slow worker	-15	59	-55		40	43	07	46	49	22	-06	19	55	55
5. External reliance	-39	25	-75	58		42	17	43	40	53	19	10	39	24
6. External blame	-13	54	-33	54	48		-17	22	55	59	20	43	50	70
7. Inconspicuous	-38	-29	-30	07	25	-04		46	-14	-04	-20	-32	-01	-16
8. Inatten.-withdrawn	-35	44	-64	68	61	54	28		48	20	-12	10	42	26
9. Irrel. response	-02	66	-34	51	39	60	-18	49		32	18	57	57	61
10. Achieve. anxiety	-20	22	-35	37	51	61	21	43	34		31	25	32	32
11. Need for closeness	45	-13	11	-08	12	00	33	-16	12	02		24	04	00
12. Need achieve. recog.	27	49	01	30	08	45	24	21	54	28	13		36	43
13. Impatience	-06	61	-34	63	34	54	00	54	53	37	-10	48		60
14. Disrespect-defy.	-06	77	-13	46	20	65	-17	39	64	27	-14	48	64	

[a] The correlations for the abnormal group are in the upper right of the table; the correlations for the normal group are in the lower left.

Separate factor analyses were performed on teacher ratings of student behavior in normal and special elementary grade classes. Each item's loading and beta in each factor for each group were studied, a final set of factors were defined, and raw score factor data analyzed.

In general the results were quite encouraging. In the large majority of instances, similar factors emerged from the normal and abnormal data, this replication serving to confirm the "existence" of these behavior dimensions. In the large majority of instances, scores on these factor dimensions were related to academic accomplishment in both the normal and special classroom situations, and these relationships could not be explained merely on the basis of a common relationship between factor scores, academic achievement, and measured intelligence. Further, in most instances the behavior dimensions significantly differentiated the normal from the special class groups, suggesting that most of the behaviors being tapped may define, at least in part, the reason for special class placement, and the areas of behavior that should be considered in designing and carrying out special class programs.

The results also suggest that while openly disturbing classroom behavior and openly defiant and resistive behavior may interfere with achievement and frequently arouse teacher concern, other less conspicuous problem dimensions require as much if not more attention. Poor comprehension, slowness of production, and reliance on external supports, for instance, are more highly related to achievement than the "acting out" behaviors, and the child who makes himself inconspicuous in class may be missing as much as the child who annoys peers or requires that the teacher impose external controls.

The analyses for age revealed two interesting general findings beyond the individual correlations of age with factor scores. First, considering the normal data as establishing a "normal" expectation regarding behavior change as a function of growth and school experience, four behavior factor scores decreased with increase in age: External Reliance, Externalization of Blame, Achievement Anxiety, and Need Achievement Recognition. While the abnormal group obtained higher mean scores, scores on both External Reliance and Need Achievement Recognition also decreased with increase in age, as in the normal group. On the Externalization of Blame and Achievement Anxiety factors, however, scores did not decrease with increase in age in the abnormal group. The suggestion is that these "immature" behaviors are less refractory to change with increase in age (and perhaps special educational procedures), and that particular attention might be paid to ways in which special educational approaches can be brought to bear in handling these symptoms.

The second general finding relative to the age variable is that in all instances wherein scores changed with age, the change indicated movement in a positive direction. The current data do not allow one to distinguish between the effects of maturation, and exposure to special educational approaches. Nevertheless, while in the normal group age was unrelated to degree of obstrperous behavior, slowness in work, inattention withdrawn behavior, irrelevant responsiveness, impatience, and disrespectful defiant behavior, all of these problems tended to diminish with increase in age in the abnormal group. The suggestion is that with age and/or special elementary class experience, one can look forward to some decrease in disturbed behavior, and some improvement in attentiveness, appropriate responsiveness, and the capacity and/or willingness to maintain an acceptable working pace.

Examination of the sex differences in factor scores also reveal a consistent and interesting finding. On the eight factors wherein sex differences emerged, without exception males obtained scores on that end of the behavior dimension related to lower academic accomplishment. It is clear from this that behavior problems, defined as behaviors associated with poor achievement, are more characteristic of boys than girls, whether in a normal or special class setting.

The results also indicate that while IQ rarely related to the behavior factors that emerged in the abnormal group, IQ scores were usually related to factor scores in the normal group. This difference may be an artifact. In the abnormal group IQ measures derived from individual tests of intelligence, while in the normal group IQ measures derived from group, paper and pencil tests. Scores from the latter type of procedures may very well be more easily affected, in a deleterious fashion, by the behavior problems being tapped by the ratings, and thus the relationship. On the other hand, it is possible that in the normal group classroom behavior problems derive more directly from school frustrations which derive from relatively low intelligence, while in the abnormal group behavior problems derive from a variety of unfortunate interpersonal or emotional experiences less directly related to intellectual potential.

The results relating factor scores to current clinical diagnostic groups are of interest in that they do not support a general contention that particular behavior disturbances in a classroom differentially typify particular diagnostic groups. While the few significant findings are not inconsistent with clinical expectations, particular types of disturbed classroom behavior are not usually pathognomic of a particular diagnostic group. While current diagnostic labels may serve certain clinical purposes, knowing a child's label will have little predictive utility for the teacher who may wish to plan ahead of time relative to classroom behaviors with which he may have to cope.

Having identified a number of behavior dimensions that are relevant to normal and special classroom settings, and ehixh bear some relationship to academic accomplishment, further steps may now be taken and new questions asked. It is important to assess the "tool" properties of the scale (e.g., its reliability, the standard errors of measurement of each factor). It is also important to determine whether achievers and underachievers differ in their profiles, to establish reasonable norms, and to examine certain relationships between factor scores and concurrent family information. These issues are dealt with in Studies III, IV and V.

Study II

A Study of the Nature and Organization of Disturbed High School Classroom Behavior

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In the previous study, the investigators describe a factor analytic study of classroom behavior of normal and "special class" elementary school children. This study, as well as the study to be described below, were part of an extensive investigation to learn how disturbed classroom behaviors of children and adolescents are organized throughout the first 12 grades, to assess some of the correlates of these behaviors and to devise reliable and meaningful tools to measure them.

While reference can be made to the previous study for discussion of the background of this work, certain highlights are worth emphasis for those who have begun their reading with Study II. We all assume, and experienced teachers are convinced, that the behavior of a student in class often reflects attitudes and motivations regarding school learning and achievement. Behavior reports are frequently part of report card systems. Teachers discuss among themselves a variety of "problem" behaviors that apparently interfere with academic success and class management, and behavior management is a recognized element in the teacher's total job.

The recent surge in interest in "special" education has heightened the focus on disturbed or problem behavior in the classroom. There is an increased interest in early recognition of school problems, whether through formal testing (e.g., Bowers, 1959) or the reporting of apparently maladaptive behaviors (see previous study reported). With the hiring of school psychologists, there has been an increased demand upon teachers to communicate to other professionals regarding behavior, and in some instances training programs for teachers have been established to help teachers recognize "pathological" behaviors as these occur in the classroom. Increasing funds are being spent in setting up special classes within public schools to educate socially maladjusted youngsters, with attention paid to both special academic techniques as well as teacher response to disturbed and disturbing behaviors so as to modify or ameliorate them.

Despite the accepted importance of understanding pupil behavior and its relationship to academic success, and the added dimension of "disturbance" in the special class setting, to date little has been done to examine the organization or patterns of classroom behavior, and no carefully devised measurement tools are available to the teacher to help him structure his observation and assist in communicating about them to others. Without more knowledge about classroom behaviors and how to measure them, it is impossible to learn which behaviors are relevant to academic success, to assess the efficacy of programs designed to have an impact on disturbed classroom behavior, and to reliably communicate about it. A previous factor analytic study (Spivack, 1964) of disturbed classroom behavior in a large sample of atypical adolescents suggested the efficacy of this approach, as well as the necessity of repeating the study not only in an abnormal but also a normal sample of students.

It is in the context of these issues that the current study was carried out. Specifically, the goal was to study the organization and correlates of certain classroom behaviors judged, by teachers, to interfere with academic success or intellectual growth, or judged as relating to academic achievement though not being achievement (e.g., test response) behaviors themselves. Through such a study it was anticipated that data obtained would subsequently serve as a basis for the development of a measurement device applicable at both junior and senior high school levels.

SCALE DEVELOPMENT

Background

Before attempting scale construction and evaluation, two issues had to be settled. First, since the main focus was to be on behavior that interferes with learning, the assumption was made that problem behavior is, by definition, behavior which does not meet one or more of the demands of the school as these are defined by the school structure or teacher. While one might, on philosophical or experiential grounds, question the legitimacy of certain demands currently made of pupils in our schools, our method was to accept teacher judgments about behaviors at the initial stage of item selection, and subsequently study them (through correlations with academic achievement measures).

The second issue was methodological, focusing on how to obtain behavior items and how to analyze ratings of students employing the items. Obtaining behavior items for study was accomplished primarily through meetings with 26 teachers of normal junior and senior high students. Weekly small group and informal discussions were held over a three month period, teachers encouraged to discuss any and all classroom behaviors which, in their experience, interfered with learning and/or were related to academic achievement. Similar meetings were held with teachers of classes for emotionally disturbed older latency age as well as teen-age students enrolled at The Devereux Schools. Behavior items were also taken from the previous factor analytic study of this latter group (Spivack, 1964). The factor analytic approach to handling the rating data was employed, since this approach had proved successful in previous studies of classroom behavior (Spivack and Swift, 1966) and nonclassroom behavior (Spivack and Levine, 1964; Spivack and Spotts, 1965).

Creation of Items

The creation of behavior items was guided by several factors. The goal was to create items which would cover the full spectrum of behaviors that occur both in regular and "special" classroom settings. The items were to refer to manifest behaviors that are readily observable by any teacher working with this age group. Each item was to retain, as much as possible, the actual words used by teachers in describing the behavior. Thus, an item might be worded so as to describe an adaptive or maladaptive behavior. As behaviors were discussed at the teacher meetings, these were recorded, placed on cards as tentative items, and discussed at subsequent meetings for improvement or clarification, to insure consensus in meaning. Ambiguous items were improved or omitted.

The Final Scale

The final high school scale employed in the study consisted of 102 items. Some items were worded so as to require a frequency of occurrence judgment by the rater. Other items required a judgment as to the degree to which the behavior typified the youngster in question. Frequency judgments were made on a 5-point scale, and the other judgments on a 7-point scale. The scale items cover a broad spectrum, included amount and quality of verbal participation, social behavior with peers, negative behavior, attentiveness, anxiety or worry, reaction to and relationship to the teacher, and so on. No prejudgment was made by the investigators regarding exclusion of any class of items. The main criterion was whether reasonably experienced teachers felt such behavior constituted a "problem" (i.e., is related to academic and/or intellectual growth, or academic achievement).

PROCEDURE

Subjects

The subjects to be rated consisted of junior and senior high school students from two local public schools and three units of The Devereux Schools in Pennsylvania. One thousand five hundred and fifty four ratings were made, 882 in the public schools, and 672 in The Devereux Units. For the abnormal Devereux sample 447 ratings were of boys and 225 of girls, while for the normal group 448 were of boys and 434 of girls. The normal sample was further selected on the basis of grade level and intelligence. An approximately equal number of ratings were made in grades seven and eight combined, grade nine, grade ten, and grades eleven and twelve combined. Youngsters were selected at three IQ levels: below IQ 100, between IQ 100 and IQ 115 and above IQ 115. Behavior was rated for students in four subject areas: English, mathematics, social studies and science.

The average IQ for the abnormal sample was 106, while for the normal group the average IQ was 108. Ages averaged 16.6 for the abnormal youngsters and 15.4 for the normals. The abnormal group covered the broad spectrum of diagnostic types, although the large majority were diagnosed as suffering one or another subtype of personality disorder, psychoneurosis, of schizoid reaction.

Rating Procedure

Ratings were made by junior and senior high school teachers from the public schools and The Devereux Schools, who had been teaching the students rated for at least four or five months. A short training period in the use of the scale was carried out with groups of six to ten teachers. The training meetings served to acquaint the teachers with the purpose of the study and the rating procedures. Emphasis was placed upon the importance of basing ratings on recent and current behavior and avoiding interpretations of "unconscious" motives and feelings. The standard for comparison was to be the average youngster in the normal classroom. Each teacher was asked to select one of his students and, using a rating guide supplied, to complete a rating during the meeting. This initial rating was accomplished in approximately 10 to 15 minutes. Following this practice rating, questions about views were discussed to insure common understanding and consistency of ratings. Eighty teachers took part in the final rating procedure.

Statistical Analyses

Data analyses were accomplished in three major steps. The factor analyses of items for each group to obtain factors employed the techniques of earlier work by one of the investigators, (Spivack and Levine, 1964), and reference can be made to this earlier work for details. In brief, a Pearsonian correlation matrix of all items was factored by an iterative procedure, beginning with conservative estimates of the communalities and of significant dimensionality. The normal promas criterion was employed in rotation to determine an objective approximation to the best simple structure.

In the second step, in order to assess the properties of the item-set for the normal and abnormal data separately, beta weights were obtained by the formula $B=E' (E'E)^{-1}$, where E denotes the equamax factor matrix. A separate rotation to determine the best orthogonal simple structure had to be accomplished employing the normal equamax criterion.

For both groups, separately, these data were used to define the emerging factors. In each case, an item was considered for inclusion when its promax loading was .30 or better, and when its beta weight indicated that it was making a greater contribution to this factor than to other factors. In a few instances, items with lower betas were retained when other evidence seemed to justify retention (e.g., the discriminate quality of the betas; the similarity of the pattern of correlations of this item to the other factor items). Following these procedures, 12 factors emerged in each group that were very similar. Three other factors emerged in the normal group and one in the abnormal group that did not emerge in the other group.

From these data, the third step was taken. Items that best defined the twelve factors common to both groups were selected. To accomplish this, not only were the promas loadings and beta weights utilized in decision making, but items were retained only when their correlations with IQ, age, sex, and achievement measures were similar to other items in the factor. At times the judgment to retain or eliminate a questionable item was made in consideration of the results of the previous study of the classroom behavior of adolescents (Spivack, 1964). The data from the items best defining the twelve common factors, plus the four factors not common to both groups, were returned to the computer. Raw score factor scores were determined for each factor for each group, and these were related to IQ, age, sex, academic achievement measures, course content (in the normal group) and clinical diagnosis (in the abnormal group). The mean factor score of the normal and abnormal groups were compared on each factor. Either correlational or analyses of variance procedures were employed, depending upon the variable.

Additional Variables

In order to better evaluate the meaning of each factor developed, the data from several additional variables were included in the statistical analyses. These variables were related to scores on each item in the scale and on each of the final factors for both the normal and abnormal groups. Comparisons of factor scores were made between groups and between various subgroups within the normal and abnormal samples.

The data included were age, sex and IQ of each youngster. Individually tested IQs were available for the abnormal sample and group IQs for the normals. A large number of different teachers made ratings in each subject area for the normal group and correlations between scores on each factor and class grades were made in English, social studies, science and mathematics. These subject area data were not included for the abnormal group because of the small number of teachers in each subject area. In the abnormal group, differences in Devereux School structure and treatment necessitated the inclusion of two grade systems. For the lower IQ youngsters and the group most resembling the junior high school sample, quarterly term grades were included. For the senior high school group there were bi-weekly grades based upon achievement over the two week period just prior to the behavior rating. Data on diagnosis were available in the abnormal group.

RESULTS

For ease and clarity of presentation each of the twelve factors common to both groups will be described one at a time. The four additional factors occurring only for one or the other of the groups will then be described. In each instance the items best defining the factor will be presented in table form and discussed. Following each discussion the factor raw score correlates of the final factor will be presented.

Reasoning Ability

This dimension, presented in Table 1, taps behaviors which involve making inferences, grasping concepts, applying principles and, in short, using reasoning ability. As would be expected, high factor scores were clearly related to successful achievement.

Table 1

Rotated Promax Loadings on Factor Labeled "Reasoning Ability"

Item No.	Normal Promax	Abnormal Promax	Description of Items[a]
61	.42	.46	Effective in applying principles
67	.42	.47	Quick to grasp a new concept
76	.39	.48	Effective in making inferences
90	.35	.48	Able to sift the essential from the non-essential

[a] The item descriptions are a shortened form of most of the items, although they include the essence of the items as used in the scale.

For the abnormal youngsters the correlations with both bi-weekly achievement grades and quarterly term grades were significant, ($r = .52$, $p = .01$; $r = .36$, $p = .01$, respectively). The correlation of this factor and intelligence was not significant for the abnormal students. The factor scores for the normal group were correlated with achievement, ($r = .64$; $p = .01$), and IQ, ($r = .60$; $p = .01$). The effect of IQ was partialled out, resulting in a significant correlation between reasoning ability and achievement irrespective of intelligence, ($r = .48$; $p = .01$).

Contrary to what might be expected, the difference between normal and abnormal groups revealed that Reasoning Ability was rated as occurring more frequently in the abnormal class groups, ($F = 54.2$; $p = .01$). This finding might reflect the fact that special class groups are considerably smaller in size, thus perhaps affording more opportunity for these behaviors to appear or allowing the teacher to be more alert to specific evidences of the behaviors in question. It is also possible that the normal class teacher expects a higher level of reasoning ability than the teacher of disturbed youngsters, and thus operates with a different frame of reference in making ratings.

The difference between diagnostic categories in the abnormal sample tended to be significant, ($F = 2.9$; $p = .05$), with highest factor scores received by schizophrenic and psychoneurotic youngsters, and relatively low scores received by the passive-aggressive group. In both the normal and abnormal groups the difference in factor scores between boys and girls was not significant. The overt display or reasoning ability tended to diminish with age, (normal, $r = -.10$, $p = .05$; abnormal, $r = -.11$, $p = .01$). For the normal group the comparison of the mean ratings in the different subject areas did not yield a significant difference.

The main results indicate that high scores on this factor are significantly correlated with academic learning for both normal and abnormal groups, across all levels of intelligence, that scores differ for different diagnostic groups, that scores may diminish with increase in age. Any explanation as to why the abnormal group obtained a higher mean score remains ad hoc.

Originality

As table 2 indicates, the items defining this factor in both groups are quite similar, dealing with behavior that involves the degree to which the youngster brings or indicates original, unique and interesting ideas

Table 2.

Rotated Promax Loadings on Factor Labeled "Originality"

Item No.	Normal Promax	Abnormal Promax	Description of Items
5	.39	.30	Bring up points of view to be explored or discussed
22	.37	.33	Bring things to class which relate to the current topic
48	.50	.29	Come up with original or unique thoughts which are unusual but relevant
97	.19	.48	Prepare assignments in an interesting and original fashion

and work which are relevant to the classroom topic. High factor ratings were positively related to achievement.

Both bi-weekly grades and quarterly term grades were significantly correlated with factor scores in the abnormal group, (r = .54, p = .01 and r = .17, p = .01, respectively). The correlation with IQ was not significant. For the normal group factor scores were correlated with achievement, (r = .49; p = .01), and IQ, (r = .45; p = .01). Partialling out the effect of IQ, the correlation with achievement remained significant (r = .34, p = .01).

The normal group was rated as having significantly more behavior considered as original, yet relevant to classroom activity, (F = 25.0; p = .01). The difference between diagnostic categories was not significant for the abnormal group. For both groups this behavior was noted to decrease with age, (normals, r = -.17; p = .01; abnormals, r = -.17; p = .01). There was no correlation between scores and the sex of the youngster in either group. For the normal group the difference between ratings made in subject areas was significant, (F = 11.5; p = .01). Original behavior was rated as being displayed most in social studies and science, and least displayed in English.

The results indicate that Originality as a factor is highly related to achievement for normal and abnormal high school students, aside from the issue of intelligence. The behavior was displayed to a greater degree in the normal classroom, and especially in social studies. Scores tended to decrease with increase in age in both groups, but high or low scores did not typify any specific diagnostic group.

Verbal Interaction

As Table 3 suggests, the items defining this factor focus upon verbal interaction, or verbal initiation in the classroom with the intention of gaining or giving information.

Table 3.
Rotated Promax Loadings on Factor Labeled
"Verbal Interaction"

Item No.	Normal Promax	Abnormal Promax	Description of Items
6	.38	.27	Ask questions to get more information
10	.41	.44	Raise hand to answer a question or volunteer information
35	.37	.39	Participate actively in discussions

Factor scores were positively related to learning. For the abnormal group the correlation with bi-weekly grades was r = .57, (p = .01), and with quarterly term grades, r = .19, (p = .01). The correlation with IQ was not significant. Both achievement and IQ were significantly related to the amount of verbal interaction in the normal group (r = .47, p = .01 and r = .40, p = .01, respectively). Partialling out the effect of intelligence, the correlation with achievement remained significant (r = .34; p = .01).

As with the findings presented regarding Reasoning Ability, abnormal youngsters were rated as displaying more of this behavior, (F = 29.8; p = .01). Again, it would appear that the size of the class may be a crucial variable, considering the likelihood that verbal interaction may increase as class size decreases.

The comparison of diagnostic categories within the abnormal group revealed no significant differences between groups. For the normal group differences between factor scores in the subject areas tended to be significant, (F = 3.2; p = .05), with highest scores obtained in mathematics classes and lowest scores in English classes. Considering the data presented in the discussion of the Originality factor it appears that there is less display of both originality and verbal interaction in English classes than other classes.

For the normal group this factor diminished with age, (r = -.20; p = .01), while for abnormal youngsters the tendency was in the opposite direction, (r = .13; p = .01). There was no significant relationship between this factor and the sex of the child for either group.

The results indicate that the child's initiation of verbal interaction is positively related to academic accomplishment in both normal and abnormal youngsters. There may be greater opportunity for this behavior to occur when the classes are smaller, as within the abnormal classes. In the normal classroom there is a tendency for greater verbal interaction to occur in mathematics than English. Different diagnostic groups did not differ in amount of this behavior.

Rapport with Teacher

The items in this factor, (see Table 4), indicate a positive relationship between the teacher and the child. It is not surprising that the correlations with achievement for abnormal youngsters (bi-weekly grades, r = .33, p = .01; quarterly grades, r = .16, p = .01) and for normal youngsters (r = .41; p = .01), are all positive and significant. The correlation with IQ was significant only for the normals (r = .29; p = .01). Partialling out the effect of IQ, the correlation between achievement and rapport with the teacher was r = .30 (p = .01) for the normal group.

Consistent with the findings concerning the Reasoning Ability and Verbal Interaction factors, there was evidence of significantly greater desire for rapport with the teacher among the abnormal group, (F = 57.8; p = .01). Psychoneurotic and adjustment reaction youngsters tended to receive

Table 4.

Rotated Promax Loadings on Factor Labeled "Rapport with Teacher"

Item No.	Normal Promax	Abnormal Promax	Description of Items
47	.19	.23	Engage the teacher in conversation about subject matter or mutual interests
59	.52	.48	Liked by you as a person
65	.52	.54	Responsive or friendly in his relationship with the teacher in class

significantly higher ratings than did the passive-aggressive and schizophrenic youngsters, ($F = 3.1$; $p = .05$). This is consistent with clinical expectations. The difference between subject areas tended to be significant for the normal sample, with greatest evidence of rapport displayed in social studies and least in mathematics and English, ($F = 3.2$; $p = .05$). While there was no significant relationship with age in the abnormal group, there was an increase with age in the normal group, ($r = .14$; $p = .01$). There was no relationship to sex of the child in either group.

The results indicate that for both groups the youngster who is friendly with the teacher and liked as a person tends to achieve successfully. In the normal group, such behavior was most frequent in social studies classes. Such behavior was more frequent in the abnormal than normal group, possibly reflecting class size and the interpersonal orientation of the special class teacher. In the abnormal group, highest scores on this factor were achieved by those judged clinically least severe in terms of pathology. Schizophrenic youngsters received the lowest ratings on rapport with the teacher.

Disturbance-Restless

All of the items in this factor (see Table 5), suggest the occurrence of restless or disturbing activity which annoys or interferes with the work of both the peers and teacher, necessitating intervention in the form of controls on the part of the teacher.

The relationship between this factor and achievement is clearly negative for both normal and abnormal youngsters. For the abnormal group the correlation between the factor scores and bi-weekly grades was $r = -.33$ ($p = .01$). The relationship with quarterly grades was also significant in

Table 5

Rotated Promax Loadings on Factor Labeled "Disturbance-Restless"

Item No.	Normal Promax	Abnormal Promax	Description of Items
19	.38	.32	Act restless, unable to sit still
31	.43	.44	Annoy or interfere with work of peers
54	.43	.41	Have to be reprimanded or controlled by the teacher because of his behavior
66	.45	.38	Can't refrain from talking to classmates

in the negative direction, ($r = -.24$; $p = .01$). There was no relationship between this factor and intelligence for abnormal class youngsters. For the normal youngsters the correlation was negative both with achievement, ($r = -.26$; $p = .01$), and intelligence, ($r = -.24$; $p = .01$). Partialling out IQ, the correlation with achievement was still significant ($r = -.17$; $p = .01$).

The difference between normal and abnormal youngsters in factor scores was significant, ($F = 25.7$; $p = .01$), the abnormal group receiving higher factor scores. For the abnormal group these behaviors were displayed most by children typically described as having poorest controls. The passive-aggressive and adjustment reaction youngsters received relatively higher factor scores than the schizophrenic and schizoid youngsters, ($F = 9.9$; $p = .01$).

There was no difference between subject areas, but in the normal group this behavior was displayed more by boys than by girls ($r = -.19$; $p = .01$). It was not related to the age of the child in the normal group. The correlation tended to be significant with age ($r = -.11$; $p = .05$) in the abnormal group. The behavior was displayed most by younger children. The correlation with sex of the child was not significant in the abnormal group.

The results indicate that the presence of disturbing, restless behavior is related to lower academic accomplishment, and is displayed more by abnormal youngsters, particularly those with control problems (e.g., passive-aggressives). This behavior seems to occur equally in all subject areas and affects achievement in a negative manner, irrespective of the issue of intelligence.

Quiet Withdrawn

The items in this factor, presented in Table 6, describe the extent to which the child is limited in his interaction with and awareness of what is going on around him.

Table 6

Rotated Promax Loadings on Factor Labeled "Quiet-Withdrawn"

Item No.	Normal Promax	Abnormal Promax	Description of Items
72	.46	.41	Very quiet, uncommunicative
78	.36	.19	Oblivious to what is going on in class
80	.44	.51	Inconspicuous in class
93	.28	.18	Lack social interaction with peers

For the abnormal group, while this behavior was clearly related to poorer achievement both with bi-weekly grades ($r = -.24$; $p = .01$) and quarterly grades ($r = -.12$; $p = .01$), the correlation with intelligence was significant and positive ($r = .12$; $p = .01$). Quiet-withdrawn behavior was displayed more by the brighter disturbed youngsters. These youngsters were not achieving in spite of the positive correlation between IQ and achievement, ($r = .18$; $p = .01$). Examination of the differences between clinical diagnostic categories revealed that schizophrenic and schizoid youngsters received relatively higher scores on this factor ($F = 8.1$; $p = .01$), than passive-aggressive and adjustment reaction youngsters.

For the normal group the correlations between this factor, and achievement and IQ were $r = -.32$ ($p = .01$), and $r = -.27$ ($p = .01$), respectively. Partialling out the effect of IQ, the correlation with achievement remained significant, ($r = -.16$; $p = .01$).

The difference between the normal and abnormal groups was not significant. Within the normal sample more quiet-withdrawn behavior was rated as occurring in social studies than in mathematics or English, ($F = 3.1$; $p = .05$).

The results indicate that limited communication and alertness to what is happening in the classroom is associated with lower academic accomplishment. This was particularly evident in the abnormal group where the most disturbed youngsters appeared to achieve more poorly than their less disturbed peers in spite of the fact that they tended to be brighter.

General Anxiety

This factor (see Table 7) taps the extent to which the child appears nervous, tense or ill at ease during classroom activities.

Table 7.

Rotated Promax Loadings on Factor Labeled "General Anxiety"

Item No.	Normal Promax	Abnormal Promax	Description of Items
60	.42	.49	Outwardly nervous about taking tests
86	.51	.51	Openly nervous during class, tense fearful
91	.32	.40	Fluster, "block" or become ill at ease when expressing himself verbally

Generally anxious youngsters in the abnormal group achieve poorly on bi-weekly grades ($r = -.22$; $p = .01$), and on quarterly grades ($r = -.27$; $p = .01$). The correlation between this factor and intelligence was not significant for the abnormal group. For the normal group the correlation was significant with achievement ($r = -.25$; $p = .01$) and IQ ($r = -.23$; $p = .01$). Partialling out the effect of intelligence, the correlation with achievement was $r = -.16$, ($p = .01$). There was no significant correlation with sex or age for either group.

Abnormal youngsters displayed a significantly greater amount of this behavior ($F = 17.2$; $p = .01$). Within this group the schizoid and psychoneurotic youngsters were rated as most anxious in the classroom, and the passive-aggressive youngsters least anxious ($F = 2.4$; $p = .05$). The differences between scores on this factor in the subject areas was not significant.

The results indicate that for both normal and abnormal groups nervousness and upset concerning classroom tasks is associated with lower achievement. The behavior tapped by this factor was most apt to be displayed in special classes for disturbed youngsters, and most particularly by schizoid and neurotic youngsters. The anxiety also appears to be "general" in that it occurs equally in all subject areas.

Poor Work Habits

This factor, presented in Table 8, involves a generally inadequate approach to the classroom learning situation. The factor taps the inability to meet time requirements and the inability to perform in an organized way.

Table 8.

Rotated Promax Loadings on Factor Labeled
"Poor Work Habits"

Item No.	Normal Promax	Abnormal Promax	Description of Items
23	.10	.49	Come in late to class
41	-.35	-.13	Have work well organized
44	.21	.34	Lose, forget, or misplace materials
46	.46	.21	Fail to turn in assignments on time

This factor clearly relates to poor achievement for normal and abnormal youngsters. For the abnormal group the correlations with bi-weekly and quarterly grades was r = -.22 (p = .01), and r = -.55 (p = .01), respectively. The correlation with IQ was not significant. For the normal group the correlations were significant with achievement (r = -.54; p = .01) and IQ, (r = -.43; p = .01). The effect of IQ was partialled out, and the correlation with achievement remained significant, (r = -.44; p = .01). The correlations with sex and age were not significant for the abnormal group, while the correlation with sex for the normal group revealed that poor work habits were most displayed by boys in the normal classroom, (r = -.19; p = .01).

The abnormal youngsters displayed significantly more of this behavior than the normals, (F = 121.5; p = .01). The difference between diagnostic categories (F = 5.0; p = .01) revealed this to be behavior most typical of the passive-aggressive and adjustment reaction youngster, while the schizophrenic, schizoid, and psychoneurotic youngsters received lowest factor scores.

For the normal group the difference between subject areas tended to be significant, (F = 3.7; p = .05). Poor work habits were most evident in English and least in mathematics.

The results indicated that poor preparation for classroom work involving principally lateness and lack of organization is associated with poor academic accomplishment. This is supported by the extreme difference between the normal and abnormal groups, with the abnormal group receiving very much higher ratings than the normal group.

Expressed Inability

This factor, presented in Table 9, focuses upon the child's expressed feeling that he cannot handle the work expectations of the teacher.

Table 9

Rotated Promax Loadings on Factor Labeled "Expressed Inability"

Item No.	Normal Promax	Abnormal Promax	Description of Items
1	.54	.47	Tell the teacher he is not capable of doing the work expected
8	.57	.50	Complain the work is too hard
29	.36	.28	Express the feeling that too much work has been assigned

In the abnormal group factor scores correlated negatively with biweekly grades ($r = -.42$; $p = .01$), and quarterly grades, ($r = -.28$; $p = .01$), but not significantly with intelligence. For the normal group the correlation is significant with achievement, ($r = -.23$; $p = .01$), IQ, ($r = -.15$; $p = .01$), and over all levels of achievement with IQ partialled out, ($r = -.18$; $p = .01$). The behavior occurred significantly more frequently in the abnormal group, ($F = 185.4$; $p = .01$), and particularly by passive-aggressive and adjustment reaction youngsters, ($F = 16.0$; $p = .01$). Relatively low scores typified the schizophrenic and schizoid groups.

The difference between subject areas in the normal group tended to be significant, ($F = 3.0$; $p = .05$), with highest scores obtained in English and lowest in social studies. The correlations with sex and age were not significant for the abnormal group, while this behavior tended to increase with age in the normal group ($r = .12$; $p = .05$).

The results indicate that among high school youngsters special class students were more apt than normals, to feel unable to meet the expectations of the teacher and to complain about the work assigned. Within this group those clinically assessed as personality disorders obtained highest scores. The student expressing an inability to do the work tended to achieve poorly in both groups.

Verbal Negativism

This factor taps the extent to which there is a verbalized negative attitude expressed toward the classroom setting, whether toward the teacher, the subject matter, or peers, (See Table 10).

Table 10.

Rotated Promax Loadings on Factor Labeled "Verbal Negativism"

Item No.	Normal Promax	Abnormal Promax	Description of Items
20[a]	-.12	.22	Critical (in a negative way) of peers
33	.43	.42	Speak disrespectfully to the teacher
43	.22	.36	Criticize or belittle the importance of the subject matter of the course

[a] This item was retained despite its poor loading in the normal group because its correlations with other variables were similar to those of the other two items, its "fit" in the abnormal group, and its presence in such a factor in the previous study, (Spivack, 1964).

The correlation of this factor with bi-weekly and quarterly grades was clearly significant for the abnormal group, ($r = -.19$; $p = .01$, and $r = -.24$; $p = .01$, respectively). The relationship to IQ was not significant. For the normal group, this factor was not correlated with achievement or intelligence. The extreme difference between the two groups in factor scores revealed that the behavior was most apt to occur in the special class setting for the emotionally disturbed, ($F = 130.0$; $p = .01$). The difference between diagnostic categories for the abnormal youngsters was significant, ($F = 10.6$; $p = .01$).

In the normal group there tended to be a significant difference between the subject areas, ($F = 2.8$; $p = .05$), with highest factor scores obtained in English, with lowest in math and science. Passive aggressive youngsters were clearly the most prone to act in a verbally negative manner, with the schizophrenic and schizoid groups lowest in factor ratings. This behavior was displayed more by boys in both groups, (normal, $r = -.19$; $p = .01$; abnormal, $r = -.13$, $p = .01$), and in the abnormal group this behavior tended to diminish with age, ($r = -.13$; $p = .01$).

The results indicated that negative verbal behavior is far more characteristic of abnormal than normal class students. Within the abnormal group this behavior was least displayed by schizophrenic and schizoid youngsters, and was most frequent in the personality disorder categories. Factor scores were highest in English, the subject area which appears to be the focal point of many disturbing behaviors in the normal group. This factor was related to achievement only in the abnormal group.

Lack of Intellectual Independence

This factor taps the extent to which a youngster has difficulty relying upon his own ability to work and think independently. (See Table 11), and tends to rely on the teacher in class performance.

Table 11.

Rotated Promax Loadings on Factor Labeled "Lack of Intellectual Independence"

Item No.	Normal Promax	Abnormal Promax	Description of Items
62	.25	.21	Likely to quit when something is difficult
63	.28	.25	Reliant upon the teacher to be told how to do things
70	.24	.47	Want the teacher to do all the work or make things easy
71	.53	.21	Swayed by opinions of peers

For both normal and abnormal classes, the youngster scoring high on this factor was achieving very poorly. The correlations with both bi-weekly and quarterly grades for the abnormal group were quite high, ($r = -.58$; $p = .01$; and $r = -.46$; $p = .01$, respectively). The correlation with IQ was not significant. Equally significant was the correlation with achievement for the normal group, ($r = -.55$; $p = .01$). Partialling out the effect of intelligence ($r = -.46$; $p = .01$), the correlation with achievement remained significant, ($r = -.42$; $p = .01$). The normal group obtained significantly lower factor scores than the abnormal group, ($F = 5.6$, $p = .05$).

For the abnormal group the difference between diagnostic categories revealed that passive-aggressive and adjustment reaction youngsters were more prone to display this behavior than the psychoneurotic and schizophrenic youngsters. The difference between subject areas was not significant. There was no correlation with sex or age for either group.

The results indicate that while a lack of intellectual independence is displayed somewhat more in the abnormal classes, this behavior is clearly associated with low achievement for all children whether they be in special or regular junior-senior high schools.

Anxious Producer

This factor taps the extent to which the child reveals the feeling that he must produce more and master everything when dealing with the work assigned, (see Table 12). This behavior was positively related to achievement.

Table 12

Rotated Promax Loadings on Factor Labeled "Anxious Producer"

Item No.	Normal Promax	Abnormal Promax	Description of Items
24	.08	.42	Do more work than he is assigned
45	.19	.40	Overly concerned that he has the correct directions
83	.51	.32	Must master all the details before he is satisfied he knows something

For the abnormal group the correlations with bi-weekly grades and quarterly grades were significant, ($r = .47$, $p = .01$; and $r = .25$, $p = .01$, respectively). No correlation with IQ was found. For the normal group the correlation with achievement was $r = .39$ ($p = .01$), and with IQ, $r = .35$ ($p = .01$). Partialling out the effect of IQ, the relationship to achievement was $r = .26$, ($p = .01$).

An element of anxiety is suggested by the fact that the abnormal youngsters displayed significantly more need to produce, ($F = 11.3$; $p = .01$), and that the schizophrenic and psychoneurotic youngsters received significantly higher ratings than the schizoid and passive-aggressive youngsters, ($F = 8.2$; $p = .01$). For the normal group significantly more of this behavior was displayed in math than in English, ($F = 5.2$; $p = .01$). Normal girls tended to obtain higher scores than boys ($r = .12$; $p = .05$), and this behavior diminished with age, ($r = -.15$; $p = .01$). The correlation with sex and age was not significant in the abnormal group.

The results indicate that while the need to produce (if not overproduce) and master all of the details was clearly related to higher achievement, the need to do so was most apt to occur in the abnormal classroom.

This fact, plus the type of abnormal youngster obtaining highest scores, suggests an element of apprehension and concern regarding achievement which appears to facilitate learning in both normal and abnormal classes.

Care with Written Material

This factor, presented in Table 13, taps behavior suggesting care with and attention to written material, expressed in the tendency to go over material once it has been completed as well as the tending to become engrossed in desk work. The three items included formed a factor for the normal group only, and thus remains quite tentative.

Table 13

Rotated Promax Loading on "Normal" Factor Labeled "Care With Written Material"

Item No.	Normal Promax	Abnormal Promax	Description of Items
92	.40	---	Read over and consider a teacher's comments on paper
95	.41	---	Go over papers and assignments before handing them in
100	.34	---	Become engrossed when given an individual desk work assignment

While this factor did not emerge in the abnormal group, factor scores did correlate positively with both bi-weekly grades ($r = .52$; $p = .01$), and quarterly grades ($r = .31$; $p = .01$), but not with intelligence. With the correlation with IQ ($r = .48$) partialled out, the relationship with achievement ($r = .51$) remained significant ($r = .35$; $p = .01$).

The difference between the normal and abnormal groups was not significant. For the normal group higher scores were obtained by girls ($r = .19$; $p = .01$) and the behavior decreased with age, ($r = -.14$; $p = .01$). No such relationships existed in the abnormal group. The difference between diagnostic categories was significant ($F = 8.5$; $p = .01$), with greatest care being shown by the schizophrenic, neurotic and schizoid youngsters. The passive-aggressive and adjustment reaction groups obtained the lowest ratings. Least concern with written material was noted in English as compared to the three other subject areas in the normal group, ($F = 4.3$; $p = .01$).

The results indicated that for both normal and abnormal youngsters a failure to take care with written material highly related to poor academic achievement. There was no difference found between groups. For the normal group lowest ratings were obtained in English. Personality disorder youngsters were rated lowest in the abnormal sample. The ability to consider work once it has been completed and to become engrossed in the work would appear to be an important variable in considering success or failure in school.

Challenges Intellectual Authority

This factor which occurred only for the normal group, focuses upon the inability of the student to accept the teacher's statements and ideas, as revealed in argumentative and challenging behavior. (See Table 14).

Table 14

Rotated Promax Loadings on "Normal" Factor Labeled "Challenges Intellectual Authority"

Item No.	Normal Promax	Abnormal Promax	Description of Items
17	.34	---	Challenge teacher's knowledge with carping questions or corrections
53	.34	---	Claim the teacher has said something the teacher has not said
94	.43	---	Argue with the teacher to make every grade point he can on a test
102	.42	---	Quibble or try to prove he is right if wrong on a test or in a discussion

Factor scores were not correlated with either achievement or intelligence for either the normal and abnormal groups. There was no significant difference between groups, subject areas or diagnostic categories. The behavior was unrelated to age. For both groups boys received higher raw score factor scores, (normal $r = -.17$, $p = .01$; abnormal $r = -.13$, $p = .01$).

While the behavior tapped by this factor may annoy some teachers, and possibly reflects an important interpersonal attitude, there is no evidence to suggest it bears any relevance to academic achievement. Thus, its utility in a scale of classroom behavior is quite dubious.

Dogmatic-Inflexible

This dimension (see Table 15), taps the extent to which a youngster is "closed" to the ideas of others and seems unwilling or unable to think through a problem with an open mind.

Table 15

Rotated Promax Loadings on "Normal" Factor Labeled "Dogmatic-Inflexible

Item No.	Normal Promax	Abnormal Promax	Description of Items
84	.50	---	Dogmatic or opinionated in the way he thinks
85	.34	---	Prone to want quick "black" or "white" answers to questions
89	.24	---	Not receptive to others' opinions

Although this factor emerged only in the normal group, high factor scores related to lower achievement in the abnormal group as well as the normal group. For the abnormal youngsters factor scores correlated -.30 ($\underline{p}$ = .01) with bi-weekly grades and -.19 ($\underline{p}$ = .01) with quarterly grades. In the normal group the correlation with achievement was significant (r = -.20; $\underline{p}$ = .01), but the relationship with intelligence was not significant. The display of this type of behavior was much more prevalent in the classes for abnormal youngsters, (F = 115.5; $\underline{p}$ = .01).

Diagnostic categories and subject areas were not discriminated on the basis of this behavior. The correlations with age for both groups, and with sex for the abnormal group were not significant. For the normal youngsters, boys tended to receive higher factor scores, (r = -.12; $\underline{p}$ = .05).

The results indicate that dogmatic-inflexible behavior, which involves a lack of tolerance for the opinions of others, and a desire for the quick and simple answer, is related to poor achievement. Although this factor did not occur for the abnormal group, it is evident that the behaviors tapped occur more in the abnormal than normal setting. This behavior does not appear to diminish with age, nor does it discriminate among abnormal diagnostic categories or subject matter areas.

Impatience

This factor emerged only in the abnormal group (see Table 16). The factor taps the extent to which a youngster seems unable to wait, resists review work, and becomes impatient with details. All the behaviors suggest a dimension which reflects the extent to which a youngster feels he must move ahead rapidly to get finished.

Table 16
Rotated Promax Loadings on "Abnormal" Factor Labeled
"Impatience"

Item No.	Normal Promax	Abnormal Promax	Description of Items
27	---	.53	Complain when there is review work
52	---	.28	Start working before getting directions straight
55	---	.26	Overestimate how well he is doing
56	---	.47	Ignore or act impatient with "details" once he feels he has the general idea.

Factor scores were related to both bi-weekly grades ($r = -.17$; $p = .01$), and quarterly grades ($r = -.25$; $p = .01$), in the abnormal group, and to achievement grades in the normal youngsters ($r =-.17$; $p = .01$). After partialling out the effect of IQ, ($r = -.11$; $p = .05$) in the normal group, the correlation with achievement remained significant, ($r = -.13$; $p = .01$). The correlation with IQ was not significant for the abnormal group. The difference between groups was significant with abnormal youngsters receiving higher scores ($F = 101.9$; $p = .01$).

In the normal group the difference between subject areas was significant, with youngsters in English receiving highest factor scores and those in math and science lowest, ($F = 5.5$; $p = .01$). Different diagnostic categories tended to receive different factor scores ($F = 3.5$; $p = .05$), with greatest impatience displayed by passive aggressive group and lowest scores obtained by schizoid, schizophrenic and neurotic youngsters. Factor scores diminished with age for the abnormal group ($r = -.15$; $p = .01$) and were displayed more by boys than girls in both groups, (abnormal $r = -.11$; $p = .01$; normal $r = -.19$, $p = .01$).

The results for this factor indicate that while impatient behavior is related to poor achievement, the degree of relationship is not striking. The behavior is more evident in classes for abnormal youngsters, particularly the passive-aggressive type, is more typical of males than females, and occurs most frequently in English classes.

Factor Intercorrelations

Considering the fact that 14 of the 16 factors were clearly related to academic achievement for both groups, and the factor analyses did not utilize an orthogonal rotation, correlations among the raw score factor scores were anticipated. A previous study with elementary school children, (Spivack and Swift, 1966), indicated that the behaviors tapped by certain factors intercorrelated, suggesting broader families of behaviors.

The data presented in Table 17 suggest that there are two factor groupings, both of which emerge from both the normal and anbormal data. One family of behaviors includes Reasoning Ability (Factor 1), Originality (Factor 2), Verbal Interaction (Factor 3), Rapport with Teacher (Factor 4), Poor Work Habits (Factor 8, a low score revealing the lack of poor habits), Anxious Producer (Factor 12), and Care with Written Material (Factor 13). The behaviors involved tap the extent to which there is active desire for positive interaction with teachers and peers, the initiation of thoughts and ideas relevant to the academic material, the desire to produce even more than is expected in order to insure mastery of material presented, and presence of habits conducive to learning. Clearly, the youngster scoring high on these factors, (and low on poor work habits), is able to deal with the expectations made of him in school, and view the classroom as a place where he can exercise his mind and interact with others successfully. As a total grouping, these factors reflect the degree to which the youngster can produce in the classroom, both intellectually and interpersonally.

The second factor cluster includes Disturbance-Restless (Factor 5), Verbal Negativism (Factor 10), Challenges Intellectual Authority (Factor 14), Dogmatic-Inflexible (Factor 15), and Impatience (Factor 16). For the normal group the expression of inability to do the work assigned (Factor 9) was included. In contrast to the first cluster of factors which tapped degree of active, appropriate, achievement related behaviors, this grouping focuses mainly upon the degree to which a youngster exhibits certain attitudes or characteralogical traits that not only may interfere with learning, but may create a management problem for the teacher. Particularly apparent within this grouping are factors that reflect affect, negative in nature when it appears. Also involved are factors tapping self control.

Three factors did not fall clearly in either of these two clusters. They were Quiet-Withdrawn (Factor 6), General Anxiety (Factor 7), and Lack of Intellectual Independence (Factor 11). Lack of Intellectual Independence was the one factor which seemed to overlap both factor groupings. It would appear that the child characterized by this behavior tends to display not only limitation in his ability to produce effectively in class, but behavior of a negative and disturbing nature that requires teacher intervention. In addition, for the abnormal group the high level of correlation between Lack of Intellectual Independence and the Expressed Inability to do the work assigned (Factor 9) suggests the feeling of frustration accompanying the lack of independence and the inability to deal effectively with classroom expectations.

Table 17

Intercorrelations of Raw Score Factor Scores for Both Normal and Abnormal Groups[a]

FACTORS		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Reasoning Ability	1		70	62	53	-31	-44	-38	-65	-29	-10	-68	50	70	-03	-21	-21
Originality	2	60		73	59	-16	-44	-19	-45	-08	01	-42	58	57	10	-07	00
Verbal Interaction	3	54	72		62	-02	-65	-27	-38	01	08	-38	53	46	22	02	09
Teacher Rapport	4	39	50	57		-14	-54	-13	-43	00	-09	-33	48	51	-02	-20	-06
Disturb. Rest.	5	-11	-15	-01	-10		-15	03	60	40	58	49	-24	-46	50	56	60
Quiet Withdr.	6	-22	-39	-58	-43	-27		46	25	-06	-13	34	-24	-25	-17	-01	-08
General Anxiety	7	-21	-21	-21	-07	03	49		18	31	00	46	09	-11	07	13	16
Poor Habits	8	-45	-50	-48	-36	50	17	15		36	39	63	-47	-73	28	46	48
Expressed Inability	9	-46	-33	-25	-11	44	02	30	51		47	50	05	-23	51	44	56
Verbal Neg.	10	-10	-07	-03	-19	67	-16	-05	39	44		27	-06	-25	74	63	67
Lack Intell. Indep.	11	-52	-48	-41	-28	45	19	37	62	70	42		-27	-53	26	44	42
Anxious Producer	12	41	58	55	36	-24	-14	09	-53	-23	-18	-35		59	06	-05	01
Care Written Mater'l	13	62	59	53	42	-36	-09	05	-65	-40	-30	-46	62		-16	-33	-33
Challenges Tr.	14	09	09	20	02	49	-15	09	17	30	59	32	12	04		64	69
Dogmatic	15	-05	-08	-04	-17	51	01	17	30	28	54	40	-06	-13	64		67
Impatient	16	-08	-01	01	-14	53	-07	12	27	39	62	43	-04	-21	61	58	

[a] The correlations for the normal group are in the upper right of the table; the correlations for the abnormal group are in the lower left.

In recent years particular emphasis has been placed upon teacher awareness of certain non-acting-out behaviors. In the present study General Anxiety (Factor 7), did not fail in either of the factor groupings. It is apparent that while the effect of general anxiety as revealed by open classroom nervousness may be deleterious to learning, it does not abet poor production or negative attitudes in any consistent fashion.

Quiet-Withdrawn behavior tended to be related in a negative manner to Reasoning Ability (Factor 1), Originality (Factor 2), Verbal Interaction (Factor 3), and Teacher Rapport (Factor 4), and positively with General Anxiety (Factor 7). The suggestion is that some youngsters are quiet and/or withdrawn out of social shyness or anxiety, while others may be quiet because they have nothing worth while to contribute.

SUMMARY AND CONCLUSIONS

The purpose of this study was to develop a tool to reliable measure and analyze the organization of academically relevant classroom behaviors in the junior and senior high school classroom setting. The goal also was to better comprehend classroom functioning of normal and special class youngsters and to ascertain the differences between the two groups. The tool developed for this purpose was a scale to aid teachers and other professionals involved in the education of adolescents and in the identification and communication of behaviors related to academic success or failure.

The results of the previous study, focusing upon the elementary age youngster, suggested the use of separate factor analyses of the same items for the development of factors for use with both the normal and abnormal elementary school classes. Teacher ratings of student behavior in the normal junior and senior high schools, and in special class settings with comparable youngsters, were factor analyzed separately in the present study. Each item loading and beta in each emerging factor for each group were studied, and 16 factors were described and correlated with other variables. The results indicated that 12 behavioral groups were replicated in the normal and abnormal classes. Replication of these factors confirmed their existence and allowed for comparison between groups.

All of the 12 common factors were clearly related to academic achievement for the abnormal group, and 11 out of 12 for the normals. Each of the factor-achievement correlations was significant with the effect of intelligence partialled out. In most instances the behavior dimensions significantly differentiated the normal and special class groups. The data suggested that due to smaller classes, youngsters in special classes obtained, as a group, higher scores than the normals on factors tapping reasoning ability and originality, and the degree of display of verbal interaction in the classroom. There was also greater evidence of negativism, dependence, disturbance and restlessness, as well as poorer work habits among the youngsters in the special class setting.

In addition to the 12 common factors, three other factors emerged in the normal group and one in the abnormal group. When groups were compared on these factors, it was clear that the abnormal youngsters were more dogmatic and inflexible in their thinking, and showed greater impatience with the classroom work than the normal youngsters. These group differences, along with those on the first 12 factors, suggest that the reason for special class placement and for learning difficulties in the normal classes may be similar, and that these are behaviors which need to be considered in designing programs for special classes, school failures, dropouts, etc.

For the abnormal youngsters, while academic success or failure was related to most of the factors, in no case was intelligence significantly related to factor scores. The vast majority of the factors were related to intelligence for the normal group, necessitating the partialling out of the effect of intelligence. The implication of this finding would seem to be that when functioning and learning are disrupted, as in the case of the special class youngsters, knowledge of certain classroom behavior can significantly supplement IQ in predicting achievement.

For the most part the factors were not age or sex related. Girls tended to display the behaviors studied as much as boys, with the exception of the finding that boys were more restless and had poorer work habits, while girls tended to be more withdrawn and anxious producers. The behaviors tended to remain constant from junior high school through the senior high with one notable exception. For both normal and abnormal youngsters, the factor labeled Originality, involving original and unique thinking, bringing up points of view to be explored, and preparing assignments in an interesting and original manner, diminished significantly as the children progressed from 7th to 12th grade.

Analyses of the interrelationships between factor scores indicated that there may be two broad and relatively independent dimensions of academically relevant classroom behavior in both the normal and special class settings. One dimension (i.e., cluster of factors) taps the degree to which a youngster exhibits thoughts, words, work habits, and interpersonal behaviors which suggest an academic "producer" orientation. The second dimension taps the degree to which certain negative or disturbing feelings and behaviors exist which may reflect general academic attitudes or characteralogical traits. The relative independence of these two broad dimensions indicates that good "producers" as well as poor "producers" may exhibit (or not exhibit) qualities that may be unattractive to the teacher or create some degree of a management problem.

Analysis of these larger factor clusters also indicated that both were related to the factor labeled Lack of Intellectual Independence. The data indicated that a high score on this factor was related to both low production and a high level of negative attitude and behavioral disturbance in the class. The suggestion is that the behaviors comprising this factor may play a central role in successful (or unsuccessful) academic achievement and intellectual growth in junior and senior high school years.

Study III

A Comparison of the Devereux Elementary School Behavior (DESB) Profiles of Underachieving and Achieving Elementary School Children

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It is evident that more than mere test scores are considered when a teacher evaluates the performance of an elementary school child. It is also clear that success in school depends upon the child's motivation, persistence, self-initiation, etc., all of which appear to be related to the level of achievement. The increasing concern with the large numbers of children exhibiting academic problems has led to a focus upon non-test behaviors in an attempt to gain insights into their relationship to academic success or failure.

In Study I an instrument was developed with which the elementary school teacher could identify, describe and communicate the classroom behaviors of children in regular and special class settings. The purpose was to focus upon non-test, but achievment related (facilitating or interfering) behaviors. The Devereux Elementary School Behavior (DESB) rating scale was created for this purpose. A factor analytic approach was used to develop the scale and to assess the interrelationship among the various items within the scale. Eight clusters of behaviors or factors were found to be related to academic achievement as judged by the teacher. Those negatively related to achievement were labeled: Classroom Disturbance, Impatience, Disrespect-defiance, Externalized Blame, Achievement Anxiety, External Reliance, Inattentive-withdrawn, and Irrelevant Responsiveness. The factors related positively to achievement were labeled: Comprehension and Creative Initiative.

Procedure

As part of the larger study, a comparison was made between a small number of children considered to be underachieving and their more successful peers. The purpose was to examine the classroom behaviors of average to high average IQ children receiving a grade of C or D, and their peers receiving a B or A grade. The children were all enrolled in a regular public elementary school program within the same school.

Underachievement was defined specifically as an academic mark or grade which was one to two levels below what was to be expected considering the intellectual potential of the child. Thus, the underachiever group consisted of (1) average IQ children (IQ 103 to 106) who were receiving the grade of D and (2) high average IQ children (IQ 113 to 119) receiving a C or D. The successfully achieving youngsters (Grades B or A) were paired with underachievers as closely as possible for IQ, sex and age. The IQ range for the achiever group, however, was somewhat lower (range IQ 98 to IQ 111). In the underachiever group there were five boys and three girls while the comparison group consisted of four boys and three girls. (See Table 1). The grade range was first to fifth grade.

Academic marks were assessed and the two groups were selected to be compared on behavioral factor scores. A factor score above or below the normal range (plus or minus one standard deviation around the mean) of youngsters in the regular public school (norms from the major study) was considered deviant or abnormal. The number of deviant factors for each group were tabulated. The two groups of children were compared for the number of deviant factors.

Table 1

Comparison of Achievers-Underachievers Pairs for Sex, IQ and Grade Achievement

		Achievers			Underachievers		
Pair Number	Sex	Age	IQ	Grade Ach	Age	IQ	Grade Ach
1	M	8.2	98	B	8.6	104	D
2	M	9.3	111	B	9.2	113	D
3	M	9.8	102	B	10.0	103	D
4	F	9.1	104	B	8.3	104	D
5	F	9.3	99	B	8.4	106	D
6	M	9.3	109	A	7.6	116	C
7	F	11.6	98	A	7.3	118	C
8	M	-	-	-	6.3	119	C

Results and Discussion

Table 2 presents the absolute number of children who received abnormally high or low factor scores for each factor.

It is clear that the sample of underachieving youngsters was behaving differently than their more successful counterparts. On every behavioral factor, more underachieving children showed deviancies. Closer examination of this data by factor is necessary in order to better assess the differences between groups.

Table 2

Number of Children Receiving Deviant Factor Scores

	Factors									
	1	2	3	4	5	6	7	8	9	10
Underachievers (N=8)	6	3	1	3	4	5	3/1*	3	5	0/2
Achievers (N=7)	0	0	0	0	2	0	0/1	1	2	0/0
Factor Name	Classroom Disturbance	Impatience	Disrespect-Defiance	External Blame	Achievement Anxiety	External Reliance	Comprehension	Inattentive-Withdrawn	Irrelevant-Responsiveness	Creative Initiative

*For factors seven and ten the number to the right of the slanted line refers to the number of children rated in the positive, achievement oriented direction.

Factors

Classroom Disturbance

For Factor 1, Classroom Disturbance, the level of scores were related to the presence or absence of behaviors which necessitate teacher control (i.e., the extent to which the child is drawn into the noise-making of others, initiates behavior which is annoying or interferes with the work of others, needs to be reprimanded). Of the eight underachievers, six received deviant scores on this factor. Four of these six children were rated as showing a great deal of disturbing behavior in the classroom. Interestingly, however, and apparently significant in terms of lack of achievement, was the fact that two of the underachieving children demonstrated abnormally little of this kind of classroom interaction. For the seven achieving youngsters, all received moderate scores revealing that students who earn B and A grades do, upon occasion, create some disturbance which attracts both teacher and peer attention. Their behavior falls into a range which while necessitating attention from the teacher and peers, can be handled effectively. Some underachieving children appear to go beyong what is tolerable or at least reasonable in the learning setting. Others appear to be initiating less than normal by way of interaction and contact not sanctioned by the teacher.

Impatience

This factor taps the child's ability to wait to begin work (Does he start working on something before getting the directions straight?), to go over and correct a "completed" paper and to take the time to present work neatly. Three of the underachievers received deviant scores as compared to none of the others. Two of the three were assessed as rarely demonstrating impatience, while the third was extremely prone to enter too quickly into a task and was resistant to correcting her work. All of the achievers showed some of this behavior. The suggestion was that there was an element of alertness and drive in all successful children which, at times, caused them to want to go ahead more quickly than was desired by the teacher. However, this child was apparently able to present the work in an acceptable fashion.

Disrespect-defiance

This factor includes behavior involving derogatory remarks toward the subject matter of the course and teacher, and the child's refusal to do what he is asked to do. In the original study, disrespectful and defiant behavior occurred very infrequently in the regular public school. It appeared mainly in classes for disturbed children. Only one of the present sample of 15 was rated as abnormally high. This one child was an underachiever. In view of the finding that this behavior was rare in the regular school, it is not surprising that the one child demonstrating this behavior was deviant on six of the ten factors, revealing a great deal of difficulty coping with the school program. None of the successful achievers scored above the group mean. Three other underachievers scored well above the mean in addition to the abnormally high youngsters.

External Blame

For some children, difficulties in school are viewed as the "fault" of the teacher and the school's expectations of them. These children say the teacher doesn't help them, blame the teacher and the circumstances when things don't go well, and are quick to say the work assigned is too hard for them. Three of the eight underachievers received abnormally high ratings with a fourth child bordering on the deviant range. None of the achievers received above the mean ratings. It appears that unsuccessful children tend to view the teacher and the school environment as the source of their troubles and/or discomfort and perceive the teacher as a non-comforting individual at these times. Failure is not viewed in terms of inner responsibility, but due to externals in the learning situation.

Achievement Anxiety

This factor assesses the tendency of the child to show upset and disturbance concerning tests and test scores, knowing the "right" answer, and his sensitivity to criticism or correction. Of the underachievers, four children received deviant scores. Three were extremely high and one very low in the occurrence of these behaviors. Both of the normal youngsters receiving deviant scores were rated as very low in anxiety concerning achievement. The difference between groups, then, is in terms of the number of highly anxious children in the underachieving group. It appears that a reaction of upset and hypersensitivity in the face of difficulties is indicative of an inability to cope with the demands of the situation, as well as an inability to meet the challenge presented. It appears that some underachieving youngsters are constantly anxious about the kind of performance expected of them.

External Reliance

Some children were unable to proceed with their work without additional teacher direction. If given a choice they had difficulty deciding what to do. Four of the eight underachievers received deviant scores on this factor, three of the four being abnormally high. None of the achieving youngsters were rated boyond the normal range (one standard deviation from the mean). It appeared that external support and assistance was frequently felt by the teacher to be necessary in order for the three underachieving children to proceed successfully. The fourth underachiever was rated as never reliant upon the teacher under any condition (even though he was receiving a grade of D). This child received abnormally low ratings on almost every other factor, suggesting a serious lack of contact and interaction with both the teacher and his peers. Three of the remaining four underachieving children were also rated as highly reliant, well above the normal mean. Thus, it would appear that the children who were not successful in school demonstrated a limitation in independent work skills which further served to impede production.

Comprehension

This factor considered the extent of the child's ability to apply what he has learned and to get the point of what he reads or hears, as well as the likelihood of his knowing the material when called upon. Three of the underachieving children were rated "rarely" on items in this factor. All of the achievers were rated within or above the normal range in the direction of success in understanding the day-to-day classroom work. One underachiever was considered to be successfully comprehending the daily material. This child received positive ratings on all but Factor 1, Classroom Disturbance. He was considered to be a very disturbind child, requiring the teacher to reprimand frequently. Nevertheless, his behavior was rated as above the mean in Disrespect-defiance and External Reliance. This suggests that while he understands the material, there is an element (growing or diminishing, only time will tell) of antagonism toward the teacher and the school and a feeling on the part of the child that he really can not cope with the demands of the school.

For the three underachievers who were having difficulty understanding the material as presently presented, all were considered as highly reliant (Factor 6), showing a high degree of anxiety concerning achievement (Factor 5), and showing behavior which suggests the inability to take responsibility for their own difficulties (Factor 4).

Inattentive-withdrawn

Two of the underachieving youngsters were rated as quick to lose attention and generally oblivious to what is going on in class. None of the achievers were rated in this manner. (The significance of the low rating in each group remains in doubt.) The suggestion is that there is an inability on the part of these children to maintain an alertness to the teacher and the material presented. Without teacher awareness and intervention they lose contact with what is going on in class. In addition, even with the teacher close at hand, some children have a limited ability to "stay with" her during an explanation of the work to be done. It is not surprising that these children are not successful.

Irrelevant Responsiveness

This factor taps the extent to which the child brings thoughts and ideas into class discussion which are irrelevant to the topic. There is an element of exaggeration or untruthfulness to his stories and a tendency on the part of the child to interrupt others (including the teacher) by calling out answers or making unsolicited remarks. Four underachievers and one achiever were rated as abnormally high on this factor. (Again, as with Inattentive-withdrawn, the meaning of the very low score for one youngster in each group remains in doubt.) For the achieving youngster, Irrelevant-responsiveness was the lone deviant factor while the four underachievers had from two to four other deviant factors as well. The youngsters who received abnormal ratings both for this factor and the previous factor (Inattentive-withdrawn), demonstrated, at best, a peripheral awareness of the classroom activities as well as inability to contain and channel their own thoughts. For others there appears to be a desire for attention and a wish to take part in the discussion with any material they can think of. This suggests a limitation in awareness of others' perception of their exaggerated and, at times, untruthful thinking.

Creative Initiative

Unlike the previous factor (Irrelevant Responsiveness), Creative Initiative involves the bringing of relevant and interesting ideas and material to class. There is an aspect of positive self-initiation and a desire to take part meaningfully in the classroom learning situation. On this factor two of the underachieving youngsters were rated as contributing a great deal to the class discussion. While none of the achievers were so rated, six of the seven achievers were ranked at, or above, the mean for the sample group. Two of the underachievers were rated considerably below the mean. The fact that the two youngsters, even while doing poorly in marks, continued to show positive drive and desire to produce in school may be prognostically significant. It is also important that two underachievers' scores approached the low end of the scale revealing a tendency to be limited in the ability or desire to interact meaningfully in the classroom environment. It is suggested that the drive to relate one's experiences in a meaningful manner to what is going on in class, while apparently not enough to overcome low grades, may be an important indication of a child's motivation to succeed.

Summary and Conclusion

The comparison between achieving and underachieving youngsters' factor levels is presented in Table 3.

Table 3

Factor Level Comparison Between Achieving and Underachieving Youngsters[a]

Underachievers

Child	1	2	3	4	5	6	7^b	8	9	10^b
1	x	.	.	.	.	.	x	.	.	x
2	.	.	.	x	x	x	o	.	x	x
3	o	o	.	.	o	o	.	o	.	.
4	o	.	.	.	.	.	.	.	o	.
5	x	x	x	x	x	.	.	.	x	.
6	x	.	.	.	x	.	o	x	x	.
7	x	o	.	x	.	x	.	.	x	.
8	.	.	.	.	.	x	o	x	.	.

Achievers

	1	2	3	4	5	6	7^b	8	9	10^b
1	.	.	.	.	.	.	.	.	.	.
2	.	.	.	.	.	.	.	o	.	.
3	.	.	.	.	.	.	.	.	.	.
4	.	.	.	.	o	.	.	.	.	.
5	.	.	.	.	.	.	.	.	x	.
6	.	.	.	.	o	.	x	.	.	.
7	.	.	.	.	.	.	.	.	o	.

[a] x = high (above 1 standard deviation)
o = low (below 1 standard deviation)
. = middle range

[b] High scores are in the positive direction and suggest an element of success in the child's daily classroom functioning.

Six of the eight underachievers were considered abnormal (rated either as displaying too much or too little of a particular behavior) on three or more factors. No achieving youngster was deviant on more than one factor. Thus, non-achieving youngsters' problems were multiple. The suggestion was that for some children when failure occurs it is accompanied by a number of behavioral reactions which further serve to impede learning. The inability to conform to classroom standards (i.e., behavioral difficulties or withdrawal from class activities), creates a situation in which learning is unlikely.

it is also suggested that educational programs for underachievers must consider, and in some manner deal with, their inability to make appropriate use of class structures, environmental stimulation, teacher guidance, peer interaction, and self-motivation and regulation, as well as deal with deficiencies in academic skill areas.

The eight unsuccessful achievers were demonstrating deviant classroom behavior revolving around their failure to cope with school demands on 35 of a possible 80 behavior factor ratings. (Eight children rated on ten factors each). The successful seven peers received only three deviant ratings.

The following conclusions from this pilot study are suggested:

1. Children having difficulty with the achievement expectations of the school also are unable to cope with the demands for acceptable classroom behavior.

2. Unsuccessfully achieving youngsters are demonstrating multiple behavioral difficulties which compound the existing problems.

3. Underachievement for bright youngsters may be the attainment of a grade of C; thus, failing grades are not necessary before the child can be considered an underachiever. Bright youngsters with a C grade demonstrate the same multiple behavioral difficulties as their average IQ counterparts with a D or failure grade.

4. Some achieving children demonstrate one deviant factor. No achiever was rated abnormally on more than one.

5. Consistently, achieving youngsters were rated as moderate on each factor. That is, successful children do, at times, disturb the class and peers during work, show impatience and begin work before they are adequately prepared, show some anxiety about the prospect of tests, rely upon the teacher for direction, etc. However, this is within the range which apparently can be handled effectively by "usual" teacher tactic and intervention.

6. Underachieving youngsters were most frequently rated as showing a great deal of disruptive behavior, as overly reliant upon the teacher in order to function in the class, and as apt to present material that is not relevant to the current discussion. Some underachievers showed a great deal of difficulty waiting for directions and presenting work neatly, a high level of anxiety concerning achievement and were prone to blame the teacher and the circumstances for their difficulties. On the other hand some underachieving children were consistently demonstrating a lack of involvement with class activities, the teacher and their peers. These youngsters appear to be failing to enter into the classroom environment, whether positively or negatively. They do not react with what appears to be a normal amount of disruptive behavior,

they rely too little upon the teacher (even though they are failing to understand the material presented and are receiving a grade of D), and they generally display little behavior of an interactional and communicative nature.

These conclusions suggest that in order to aid the learning of underachieving children, it frequently is necessary to focus upon non-test behaviors. In this manner it may be possible to gain a greater insight into the nature of the difficulty and the extent to which special teacher tactics are necessary.

Study IV

A Further Comparison of School Behavior Profiles of Underachieving and Achieving Elementary School Children

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This is a second and larger study to investigate profiles of underachieving elementary school children. The previous study (Study III) involved a comparison of a small number of cases of children considered to be underachieving, adademically, with a paired group of achievers. Achievement was defined by teacher grades. These cases were extracted from the major investigation (Study I) in which the DESB was developed to aid the elementary school teacher to identify, describe and communicate the classroom problem behaviors of children that interfere with learning.

The present study involved a larger and new sample of children, and behavior profiles of underachievers were examined when underachievement was defined by teacher grades as well as group achievement test scores.

In the earlier studies the ten factors of classroom behaviors which were found to be related to academic achievement were described. Briefly, these include:

Factor	1	Classroom Disturbance
	2	Impatience
	3	Disrespect-defiance
	4	External Blame
	5	Achievement Anxiety
	6	External Reliance
	7	Poor Comprehension
	8	Inattentive-withdrawn
	9	Irrelevant Responsiveness
	10	Creative Initiative

Factors 1, 2, 3, 4 and 9 appear to focus mainly upon what might be termed "acting out" or poorly self-controlled behavior, all behaviors which, to some degree necessitate teacher intervention and control. Factors 6, 7 and 8 appear to involve the inability to effectively deal with the classroom demands for attention, concentration and independent work. These reflect an over-dependence upon the teacher in order for the child to progress as would be expected. Factor 10 also taps the extent to which the child can enter into the classroom with ideas and material which are self-initiated and relevant. Factor 5 involves the tendency to upset under the pressure of academic expectations.

The following conclusions were drawn in the previous investigation and were tested in the present study:

1. Children having difficulty with the achievement expectations of the school also are unable to cope with the demands for acceptable classroom behavior.

2. Unsuccessful achieving youngsters are demonstrating multiple behavioral difficulties which compound the existing problems.

3. Underachievement for bright youngsters may be the attainment of a grade of C; thus, failing grades are not necessary before the child can be considered an underachiever. Bright youngsters with a C grade demonstrate the same multiple behavioral difficulties as their average IQ counterparts with a D or failure grade.

4. Consistently, achieving youngsters were rated as moderate on each factor. That is, successful children do, at times, disturb the class and peers during work, show impatience and begin work before they are adequately prepared, show some anxiety about the prospect of tests, rely upon the teacher for direction, etc. However, this was within the range which apparently can be handled effectively by "usual" teacher tactics and intervention.

5. Underachieving youngsters were most frequently rated as showing a great deal of disruptive behavior, as overly reliant upon the teacher in order to function in the class, and as apt to present material that is not relevant to the current discussion. Some underachievers showed a great deal of difficulty waiting for directions and presenting work neatly, a high level of anxiety concerning achievement, and were prone to blame the teacher and the circumstances for their difficulties.

PROCEDURE

The present sample consisted of 298 ratings of the classroom behavior of fifth grade children selected from local suburban public schools. The children were selected for study on the basis of achievement records. Two different measures of academic achievement were used: one, the group achievement test scores (Iowa Test of Basic Skills), which was administered during the regular testing schedule of the school system six months prior to this study; and two, achievement grades assigned by the classroom teacher on the typical school report card at the time of the study. Each child was rated by his teacher using the Devereux Elementary School Behavior Rating Scale, (DESB). Behavior profiles were drawn using the ten factors of this scale which were previously found to be significantly related to achievement. Those factor scores falling one standard deviation beyond the normal mean (in the direction of a negative correlation with achievement), were considered to be abnormal or deviant. The number of these abnormal factors was tabulated for each child. In this manner, it was possible to compare the amount of deviant classroom behavior of children considered to be successful or unsuccessful achievers.

The first step involved the selection of group test (IOWA) achievers. To define achievement (or lack of it), the child's intellectual ability was considered. Each child's group test sub-scores in the Language and Non-language areas was compared with national norms for children of the same grade and IQ. For this comparison, the IOWA special percentile norms for IQ levels, (from the Manual designed for use with the IOWA) was used. Thus a child with an IQ of 95 was compared only with other children in the 90-99 range at the same year level, and a child with an IQ of 125 with others in the IQ range 120-129. Achievers were then defined as those with both language and non-language sub-test grades above the 85th percentile in comparison with children with like IQ's. Underachievers were those youngsters ranked below the 30th percentile in at least one area, and below the 45th percentile in both. Eighty-three group test achievers and 23 underachievers were selected and rated for classroom behavior by their teachers, employing the DESB.

In order to ascertain each child's actual classroom achievement level, report card grades were also examined and recorded as a measure of success or failure in classroom achievement (A, B, C, D, F). Achievers in this case were defined as all children receiving a grade of A or B and underachievers as receiving a D or F. Forty-seven additional behavior ratings were made of underachieving (grade-wise) children who were not included in the original IOWA tested group for various reasons, (e.g., mid-range group test scores, no IQ recorded). With this data an assessment could be made of the relationship between overt classroom behavior and the two achievement criteria (group test and report card marks). Both criteria measures of achievement were available on 106 children (see Table 1). Report card marks and DESB measures were available on 100 classroom achievers and 68 classroom underachievers.

Table 1

Number of DESB ratings of fifth grade children grouped as achievers or underachievers on the basis of IOWA group test scores and report card grades, in combination.

	GROUP TEST	
	Achievers (85+ percentile)	Underachievers (01-45 percentile)
Achievers (A or B)	N = 74	N = 11
REPORT CARD MARKS		
Underachievers (D or F)	N = 9	N = 12

As the data in Table 1 reveals, group test achievers were most frequently those who received A or B on their report cards. Seventy-four of the 83 group test achievers were in the report card achiever (A or B) category. In contrast, half of the group test underachievers received A or B and half D or F.

To complete the description of the sample, Table 2 presents a comparison of IQ range for the group test achievers and underachievers. Fourteen percent of the achievers and three percent of the underachievers were below IQ 100. The median IQ for the achiever group was 118, for the underachiever group, 122.

Table 2

A comparison of achievers and underachievers (Group test) by IQ

	IQ	90-99	%	100-109	%	110-119	%	120-129	%	130+	%
Under-achievers (N=28)[a]		1	(03)	4	(14)	5	(18)	10	(35)	8	(25)
Achievers (N=73)		10	(14)	13	(18)	21	(28)	15	(20)	14	(19)

[a] Actual number of children for whom IQ's were available.

Table 3 contains the IQ ranges at each report card achievement level. It is evident that brighter youngsters earn higher grades than their less endowed counterparts. Children with IQs below 100 earned a grade of D or F 36 percent of the time as compared to 6 percent of the children with IQ's over 130.

Table 3

A comparison of level of achievement (Report card grades) for the total sample[a] by IQ

Report Card Grade	IQ	90-99 (N=25)	%	100-109 (N=52)	%	110-119 (N=80)	%	120-129 (N=63)	%	130+ (N=50)	%	None Recorded (N=28)	%
A - B		2	(08)[b]	9	(17)	28	(35)	27	(43)	33	(66)	1	(04)
B/C		2	(08)	8	(15)	11	(14)	11	(17)	1	(02)	0	(0)
C		12	(48)	19	(36)	29	(36)	16	(25)	13	(26)	8	(29)
D - F		9	(36)	16	(31)	12	(15)	9	(14)	3	(06)	19	(68)

[a] Due to the nature of the school program some children were rated by different teachers in two subject areas, i.e., Language Arts and Arithmetic. One hundred and seventy-seven youngsters were rated using the DESB, some twice creating a total of N of 298.

[b] Percent within the IQ range, i.e., 90-99.

RESULTS

The results of the fourfold evaluation of the data are presented in Table 4. Comparison was made among youngsters who were:

1) Achievers by both group test and report card marks (AA) (N=74)

2) Achievers by group test but report card underachievers (AU) (N=9)

3) Underachievers by group test but report card achievers (UA) (N=11)

4) Underachievers by both criteria (UU) (N=12)

Table 4

Percent of deviant ratings on each DESB behavior factor among children grouped as achievers or underachievers on the basis of IOWA group test scores and report card marks, in combination.

GROUP TEST

		Achievers (N=74, AA)										Underachievers (N=11, UA)									
Report Card		Factors										Factors									
Achievers		1	2	3	4	5	6	7	8	9	10	1	2	3	4	5	6	7	8	9	10
	%	07	09	05	08	22	01	03	08	03	08	18	09	18	09	18	09	09	27	00	27
Under-Achievers	%	22	56	11	22	56	33	56	67	22	33	08	50	17	17	28	25	50	50	33	42
		(N=9, AU)										(N=12, UU)									

1. Achiever-Achievers (AA)

Examination of Table 4 reveals that for children successful on both the group test and report card achievement criteria (AA), less than nine percent were rated as deviant on all but one factor. The behaviors tapped on Factor 5 (Achievement Anxiety) were in high occurrence in 22 percent of the cases. Thus, some of the achieving youngsters were displaying a great deal of upset and worry concerning scores on tests, knowing the "right" answer and an oversensitivity to criticism or correction from the teacher. The suggestion is that many children who do fairly well, achievement-wise, still suffer levels of anxiety that may interfere with their optimal functioning.

2. Achiever-Underachievers (AU)

The difference between youngsters successful both in class and on group tests (AA) and this AU group (successful only on group tests) is highly evident. A considerably larger percentage of the AU youngsters were rated as deviant on nine of the ten factors. The most striking feature concerning the classroom functioning of these children is that more than half are displaying a great deal of inattentiveness and/or quick loss of attention (Factor 8), a lack of comprehension of the day-to-day material presented in class (Factor 7), a great deal of anxiety concerning test achievement demands, (Factor 5), and an impatience with the necessity of waiting for directions, or redoing and correcting work (Factor 2). In addition 33 percent, as compared to one percent of the AA youngsters, were rated as extremely reliant upon the teacher and/or external supports in order to proceed with the work in class (Factor 6).

3. Underachiever-Achievers (UA)

These youngsters were in the lower percentile on group tests but earned achiever report card grades (A or B). The ratings of behavior were more like the AA group than either of the other groups (AU or UU). There tended to be certain achievement impeding behaviors being displayed. One-fourth of this group was rated as initiating little in the way of relevant material or ideas into the class discussion, (Factor 10), and as inattentive (Factor 8).

4. Underachiever-Underachievers (UU)

The similarity between this group and others successful only on group tests (AU) is interesting. The description of the behaviors most displayed is much the same and an equal contrast to the AA and UA groups.

The results of a two-way analysis using report card grades as the achievement criterion is presented in Table 5.

Several trends are immediately apparent from examination of this data. Eighty percent of the achievers (A or B), as compared to 15 percent of the underachievers (D or F), were rated as showing little or no deviant behavior. Sixty-three percent of the underachievers and nine percent of the achievers were deviant on four or more factors, and 85 percent of the underachievers were displaying two or three different areas of behavioral difficulty. There is a steady decrease in the percent of youngsters showing little behavioral difficulty and a consistent increase in those displaying multiple problems as the report card grades declined from A to F. A third aspect of interest is the size of the increase in behavioral difficulties from youngsters with a grade of C to grades of D or F. (D and F were combined because only 12 F grades of the 68 were recorded and there was no apparent difference in the number of behavioral difficulties between the two).

Table 5

Number and percent of deviant factors by the report card achievement criterion

Achievement Level	N	Deviant 0-1 N	%	Deviant 2-3 N	%	Deviant 4+ N	%
A or B	100	80	(80)	11	(11)	9	(09)
B/C	33	20	(61)	5	(15)	8	(24)
C	97	50	(52)	21	(22)	26	(26)
D or F	68	10	(15)	15	(22)	43	(63)

Finally, the conclusion of the previous achiever study concerning the bright (IQ above 115) youngster as an underachiever is only partially supported. Of the 97 cases with a C grade in Table 5, 48 were above IQ 115 and 41 between 90-115 IQ. In the high IQ group 21 percent (10 cases) were rated as having four or more behavioral factors deviant, while 29 percent (12 cases) were similarly rated for the lower IQ group. There was an increase in the percent of cases with problem behaviors as the grade decreased, but no significant difference between bright and average children.

Table 6

Percent of deviant ratings on each of the DESB factors for children grouped as achievers and underachievers on the basis of report card grades.

	Factor 1	2	3	4	5	6	7	8	9	10
Achievers (A or B) (N=85)	08	09	07	08	21	02	03	10	02	10
Underachievers (D or F) (N=68)	45	57	35	35	43	37	57	69	37	29

When report card grades are considered alone as the measure of achievement, the differences between groups is clear for each of the ten factors. The data in Table 6 is consistent with the previous discussion concerning successful youngsters. Only achievement anxiety is in occurrence in the behavior of more than one achiever child in ten (21 percent). For the underachievers the range of percents of deviant behavior by factor is from 29 to 69 percent.

SUMMARY AND CONCLUSIONS

The results of this study expand and corroborate previous findings (Study III). Youngsters receiving a D or an F report card grade demonstrate, in from 60-85 percent of the cases, multiple problem behaviors which connote an inability to maintain successful and positive interaction with the academic, classroom learning environment. Aside from the marks they receive, underachievers are clearly different, in terms of overt behavior, from their successful peers. The occurrence of a cyclical effect of poor behavior and poor achievement (and the reverse) is strongly suggested. Children who receive report card grades of A or B display significantly less problem behavior than youngsters who receive a grade of D or F. This occurred irrespective of the level of group test achievement and overall levels of intelligence. While brighter youngsters receive higher grades, (as would be expected) the occurrence of a D or F report card grade at any IQ level was accompanied by classroom behavioral difficulties.

One conclusion from these data is inescapable, if one accepts the assumption that a teacher's grade bears some relationship to what a child is actually learning in class. When a child is not learning, this is not only evident in manifest achievement performances (e.g., classroom tests, book reports, etc.). The underachieving child is manifesting underachievement in a variety of ways in the classroom, ways which suggest a general lack of adaptation to the demands of the classroom environment as presently designed. The further suggestion is that underachievement cannot be conceived of only in learning or "cognitive" terms, but must be seen as a total failure of the total child to adapt to an environment in which he spends a great deal of his waking hours. It behooves the educator to design not only better curricula, but also better strategies of response to those classroom behaviors which define the underachiever.

STUDY V

Normative, Reliability and Validity Data for the DESB

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The Devereux Foundation Institute for Reserach and Training

The Devereux Elementary School Behavior Rating Scale was developed and utilized as a tool to identify the classroom behavior problems of children. The scale development was part of an extensive inquiry concerning the relationship of classroom behavior to success or failure in the academic sphere throughout the total thirteen school years (see Studies I and II).

The initial purpose of the project was to learn how disturbed classroom behaviors are organized in both normal and special classes (classes for emotionally disturbed and academically retarded), and to assess the correlation between these behaviors and achievement, intelligence, age, sex and clinical diagnosis (among abnormal children). Classroom behaviors were described by teachers. A factor analytic technique was utilized to group and organize behaviors described into meaningful clusters (factors). For the elementary school scale, twelve behavioral factors evolved, ten of which were significantly related to achievement in both the normal and special class settings. These factors were: (1) Classroom Disturbance, (2) Impatience, (3) Disrespect-Defiance, (4) External Blame, (5) Achievement Anxiety, (6) External Reliance, (7) Comprehension, (8) Inattentive-Withdrawn, (9) Irrelevant Responsiveness, and (10) Creative-Initiative; the remaining two were Need for Closeness to Teacher (related to achievement only for the abnormal youngsters) and Need Achievement Recognition (not related to achievement). Factors 7 and 10 were positively correlated with achievement while all others were negatively related to achievement. The scale consisted of 44 items which made up the 12 factors plus four additional non-factor items.

As a next step, the classroom behaviors of a pilot group of underachieving and achieving children were evaluated, (see Study III). Achievement was defined on the basis of grade received (A, B, C, D, F) and the youngsters' intelligence. Comparisons were made between eight underachievers (grade D or F) and seven achievers (grade A or B), with the following results: Six of the eight underachievers were rated as displaying too much or too little (beyond one standard deviation from the initial normal sample mean) of the particular behavior tapped by three or more (mean number of deviant factors = 3.9) of the ten achievement related factors. None of the achieving youngsters were rated as deviant on more than one factor. The conclusion drawn was that underachieving youngsters' problems were frequently multiple, and that they were unable to meet the demands of the classroom for appropriate behavior as well as academic work.

The nature of this finding prompted a larger sample study of achieving and underachieving children, (see Study IV). Two hundred and ninety eight ratings were made of the classroom behaviors of fifth grade children in a public school setting, selected on the basis of group test and report card grade achievement. The results were consistent with the previous pilot study. Eighty per cent of the achieving youngsters demonstrated few, if any, behavioral difficulties with only nine per cent rated as showing multiple behavioral problems. In contrast, sixty-three per cent of the underachievers showed multiple problems amounting to deviancies on four or more of the ten behavioral factors. Fifteen per cent of this group was rated as not having behavioral problems even though they were failing academically.

It was evident from these studies that the manner in which the child relates to the teacher, the school and his peers in some fashion affects the quality of his academic work. The purpose of the present study was manifold, relating to issues of tool development, reliability and validity. Specifically, the aims were:

1. to refine certain factors: to assess the meaning of certain factors through the use of "marker" items, and possibly to add items to certain factors to increase factor score reliability;

2. to establish norms: to obtain norms for each factor across all elementary grades and both sexes, and to compare norms for different grades and between sexes;

3. to assess test-retest reliability over one week;

4. to relate scores to achievement across all grades and within each grade separately;

5. to relate scores to IQ, age (within grade level), parental age and educational level, race, sibling status, sex of rater, and presence or absence of kindergarten experience (among first graders).

It was anticipated that having completed these analyses, the Scale would be ready for use by others, both on a classroom as well as research basis.

PROCEDURE

Sample

The total sample of youngsters rated in this study was 809. One hundred and one children were rated in four classes in kindergarten; 121 children were rated in five classes in the first grade; 118 children in five classes in the second grade; 107 in four classes in the third grade; 132 in five classes in the fourth grade; 109 in five classes in the fifth grade; and 123 in four classes in the sixth grade. Thirty-two teachers in 13 different elementary schools took part in the rating of the children. The four male teachers involved taught at the fifth and sixth grade level. All of the elementary schools in a consolidated, small city system were selected in order to gain a wide range of family background and to have as normal an IQ distribution as possible.

The backgrounds of the children were quite heterogeneous. The average years of education of their mothers and fathers were 12.7 and 13.1 respectively, with standard deviations of 2.0 and 2.9. Thus, the group of youngsters rated came from homes wherein approximately one-half of the parents did not go beyond high school, but wherein approximately 16 per cent of the fathers completed college. Of the 809 children rated, 721 were white, and 88 negro. Family size ranged from one child to six, with five per cent of the youngsters having no siblings, 22 per cent one sibling, 27 percent two siblings, 25 per cent three siblings and 20 having four or more siblings. Twenty-nine per cent of the youngsters rated were the youngest child, 25 per cent the oldest, and 38 per cent the middle child.

The age and IQ descriptions for the children at each grade level and for the total sample are presented in Table 1. Due to the nature of the marking systems, academic achievement marks were available in all six grades (one to six) only in reading arithmetic. Academic grades were available in 18 classes (N = 426) in reading, and in 15 classes (N = 370) in arithmetic. Academic marks were available for grades three to six in English in 14 classes (N = 323). Marks in reading were assessed on the basis of a comparison of a child with others of the same ability (homogeneous grouping); marks in arithmetic and English were given in comparison to all children at that grade level (heterogeneous grouping). No academic achievement grades or IQ's were available in

Table 1

Age and IQ Data Describing the Normative Group

		Age[a]		IQ	
Grade level	N	Mean	SD	Mean	SD
Kgtn.	101	66	4	----[b]	---[b]
1	121	78	5	109	10
2	118	91	5	107	12
3	107	102	5	112	15
4	132	114	5	109	14
5	108	126	5	106	12
6	122	136	7	108	11
Total Sample	809	103	21	108	13

[a] Expressed in months

[b] No IQ data was available on the kindergarten sample

the kindergarten classes and in some first grade classes no IQ's were available.

Rating Procedure

The 32 teacher raters were met as a group for a short training period to acquaint them with the rating procedures. The training emphasized that the rater consider the recent and current behavior of the child, use the "average" child as the guideline for judging behavior, base ratings upon his own personal experience with the child, make no attempt to describe a consistent pattern but consider each item in the scale independently, and avoid interpretations of motives or feelings. Each teacher was to rate his entire class within a ten day period. At the end of that time, when all ratings were completed, each teacher was requested to rate four children a second time, selecting the first two boys and first two girls in the role book. They were instructed to use the exact same procedure as used in the first rating and not to try to remember the first rating. The teacher was to rate the child as though it were for the first time. The goals of this procedure were to assure consistency of approach, to aid the raters in focusing upon the actual behaviors displayed, and to gain a measure of test-retest reliability over a ten day to two week period. The raters were instructed to follow the Rating Guide attached to the front of each scale which repeated the instructions given during the training period.

The Scale

The scale presented to be used in the making of ratings included the 12 factors from earlier studies, comprised of 44 items, 4 non-factor items and 9 additional experimental items to be assessed for possible inclusion in the factors. Thus, the scale had 57 items. The rating time for each scale was found to be approximately seven minutes with a range of time of from four to fifteen minutes. The items were rated either on a 5-point scale dealing with frequency of occurrence, ("How often does the child...initiate class discussion?") or on a 7-point scale indicating degree to which the behavior is true of the child ("To what degree is the child...unwilling to go back over his work?").

Statistical Analysis

Data analyses were accomplished in two phases. The purpose of the first phase was to determine whether one or more of the 9 experimental items should be included in the established factors. In order to do this it was necessary to obtain intercorrelations between all items and all factors as well as the correlations of all items and factors with IQ and achievement grades (reading, language arts and arithmetic).[1] An experimental item could be assessed as to its "belonging" in an established factor on the basis of its correlations with other items in the factor, and the similarity to these items of its correlations with achievement measures, IQ and the remaining factors.

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[1] Dr. Albert Beaton functioned as a statistical consultant, and programmed all computer work required by the study.

The second phase involved the development of new means and standard deviations for each of the final new factors and each non-factor item across all seven grades and for each grade level separately. Test-retest reliability correlations were then obtained for each new factor score, and each factor and non-factor item using the 127 rerated scales. For both the initial and retest ratings the means and standard deviations for each factor and the three non-factor items were also compared.

The means and standard deviations for age and IQ were assessed across all grade levels (both including and excluding kindergarten) and for each grade level separately (kindergarten through sixth grade). Correlations were made at each grade level separately for each new factor score and non-factor item score with IQ, age, and each of the academic achievement grades of the child, and the age and education of mothers and fathers. Comparisons were made at each grade level for factor and non-factor item scores to assess the relationship between the behaviors of boys and girls, of negro and white children, of the effect of sibling order, and sibling rank. In each instance the means and standard deviations were gained. Using only the first grade data a comparison was made between the behavior of children who had previous kindergarten experience and those who did not. Using only the fifth and sixth grade data, a comparison was made to compare the factor and non-factor item scores obtained from male and female (teacher) raters.

RESULTS

Phase 1

The results of the first phase of this study are presented below. The intercorrelation of the experimental items with the original items for Factors 2, 6, 8, and 12 are presented and, where appropriate, the items were added to the final factors for phase 2 of the study.

Factor 2, Impatience: The original factor as developed in Study I was comprised of three items: Item 1,[2] Start working on something before getting the directions straight; Item 42, Sloppy in his work (e.g., his products are dirty or marked up, wrinkled, etc.); and, Item 55, Resist correcting his work when teacher points out it is incorrect. In an attempt to better ascertain the essential element of this factor as well as to enhance its reliability, three experimental items were tested: Item 30, Complete his work rapidly; Item 53, Unwilling to go back over his work; and, Item 57, Rush through his work and therefore make unnecessary mistakes. Item 30 did not correlate with the other items in the factor (see Table 2) and was not included in the final factor. Item 57 was significantly correlated with the other items and with IQ and academic achievement (see Table 3) and was added to the final factor. The level of intercorrelation between Items 53 and 55 (r = .80) as noted in Table 2 suggested that they were very similar items. Both items correlated similarly with IQ and achievement (see Table 3), had similar means and standard deviations (Item 53: mean = 2.2, SD = 1.5; Item 55: mean = 1.9, SD = 1.4), and had patterns of correlation with other factors similar to the relationship of the original Factor 2 with the other factors (see Table 4). Item 53 was

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[2] The item numbers are those appropriate to this version of the Scale, and should not be confused with the final numbers assigned to items in the final version of the Scale (see Appendix).

Table 2

Intercorrelations of Items - Factor 2, Impatience

Item	Item No.	55	42	30	53	57
Starts working before getting directions straight	1	.46	.36	-.05	.49	.52
Resists correcting work	55		.46	.10	.80	.48
Sloppy	42			-.16	.47	.48
Completes work rapidly	30				-.11	.23
Unwilling to go back over work	53					.52
Rushes through and makes unnecessary mistakes	57					

Table 3

Factor 2 item means, standard deviations, and correlations with IQ and academic achievement

Items	IQ	Reading	Eng.	Arith.	Mean	SD
1	-.22	-.30	-.29	-.27	2.6	1.1
55	-.24	-.30	-.41	-.36	1.9	1.4
42	-.28	-.34	-.50	-.43	1.9	1.4
30	+.29	+.24	+.36	+.39	3.1	1.2
53	-.25	.29	-.40	-.36	2.2	1.5
57	-.16	-.17	-.16	-.16	2.5	1.6

Table 4

Factor correlations with experimental items number 53, 55, and with original Factor 2

	Factors										
	1	2	3	4	5	6	7	8	9	10	11
Item 53	.59	.74	.54	.52	.24	.54	-.42	.55	.55	-.21	-.05
Item 55	.56	.81	.58	.56	.29	.52	-.41	.55	.55	-.19	-.02
Factor 2	.67		.58	.54	.29	.62	-.50	.64	.63	-.21	-.06

was substituted for Item 55 because it was felt that Item 53 was more general in its implications concerning the willingness of the child to return to work once he considered it completed. This item did not require mistakes (tapped by Item 57) or the teacher's involvement in pointing out errors, but rather focused upon the child's maladaptive functioning in the classroom work situation. It is important to note that rapidity of completion of work alone does not seem to be the essential issue tapped by this factor. Item 30 was positively correlated with achievement and negatively related to the other items in this factor. The correlation between Item 30 and Factor 2 was -.14. It would appear that the behavior dimension being measured is the extent of inappropriate drive for completion with an accompanying disregard for the quality of the work presented as "complete" and resistance to any implication of incompleteness of work. The child begins before gaining an adequate understanding, rushes through the work presenting a sloppy paper and one containing unnecessary errors, and is unwilling to go back over his work. The new factor containing Items 1, 42, 53 and 57 taps the extent to which the child's approach to and carrying out of the work presented is inadequate for the reasons mentioned.

Factor 6, External Reliance: The original factor named External Reliance was comprised of four items: Item 27, Look to see how others are doing something before he does it; Item 35, Reliant upon the teacher for directions and to be told how to do things or proceed in class; Item 38, Unable to follow directions given in class; and Item 56, Have difficulty deciding what to do when given a choice between two or more things. Two experimental items were tested with this factor. Item 48, Unable to proceed on his own once work has been assigned, was designed as a "marker" item not to be included in the final factor, but rather to gain a clearer picture of the factor meaning. This item was highly correlated with each of the other items (see Table 5) and was correlated .79 with the total factor. It was clear that the factor was tapping, to a large extent, the child's inability to proceed without external supports. Item 49, Swayed by the opinions of peers, was added to the factor. While statistically related to the other items and to the factor as a whole, this item seemed to enrich the meaning of the factor by adding in the child's

Table 5

Intercorrelation of original (Study I) items of Factor 6 External Reliance and marker and experimental items

Items	Item No.	38	35	56	48	49
Looks to see how others are doing	27	.70	.67	.56	.60	.45
Unable to follow directions	38		.82	.66	.78	.43
Reliant upon teacher	35			.65	.74	.45
Difficulty deciding	56				.63	.44
Unable to proceed on own	48					.40
Swayed by opinions of peers	49					

inability to make and to hold independent opinions in the face of opposing peer judgments. This item correlated with IQ and academic achievement to a lesser degree, but in a similar manner as the other four items in this factor (see Table 6).

Table 6

Factor 6, External Reliance, and individual item correlations with IQ and Academic Achievement

Items	IQ	Reading	Eng	Arith
48	-.41	-.42	-.47	-.55
49	-.28	-.24	-.32	-.23
27	-.39	-.43	-.45	-.44
38	-.50	-.46	-.50	-.54
35	-.53	-.44	-.40	-.52
56	-.38	-.37	-.38	-.45

The new Factor 6, External Reliance, now included five items: Items 27, 35, 38, 49, 56, tapping the extent to which the child demonstrates difficulty in functioning in an independent manner.

Factor 8, Inattentive-Withdrawn: Due to the level of intercorrelation with the total factor, the other items in the factor and the IQ and achievement variables, Item 51, Difficult to reach (e.g., seems preoccupied with his own thoughts, etc.), was added to this factor. The original items, Item 19, Quickly loses attention when the teacher explains something to him; Item 21, Makes you doubt whether he is paying attention to what you are doing or saying; and, Item 34, Oblivious to what is going on in class, focused upon inattentiveness and loss of contact. The new item adds reliability to the factor meaning and involves the teacher's feeling concerning his inability to reach the child. The intercorrelations of items is presented in Table 7.

Table 7

Intercorrelation of original items and experimental items

Items	Item No.	19	34	21
Difficult to reach	51	.64	.80	.70
Loses attention	19		.77	.81
Oblivious	34			.80
Not attending	21			

The level of correlation of the items with IQ and achievement suggests that the four items making up the final factor are generally equivalent in terms of relationship to the IQ and achievement variables. These data are presented in Table 8.

Table 8

Factor 8 item correlations with IQ and academic achievement

Item	IQ	Read	Eng.	Arith
51	-.26	-.28	-.32	-.41
19	-.32	-.41	-.42	-.50
34	-.32	-.35	-.42	-.50
21	-.37	-.46	-.48	-.54

Factor 12, Need for Achievement Recognition: Although this group of behaviors formed a factor in Study I, the factor was not correlated with academic achievement for either normal or special class youngsters. In an attempt to enhance the possible value and use of this factor, three experimental items were added to the scale: Items 31, Want to be first; 32, Brag about anything he has done; and 52, Competitive with peers. While the factor was supported in this study in terms of intercorrelation of the items, neither the individual items nor the total factor score were substantially related to the IQ and academic achievement variables (See Table 9).

Table 9

Factor 8 correlations with IQ and academic achievement

Items	Item. No.	IQ	Read	Eng.	Arith
Want to show off	4	.03	-.01	-.01	.06
Claim that he is doing better than he is	24	-.12	-.12	-.15	-.08
Tries to outdo others	23	.18	.16	.30	.29
Want to be first	31	.07	.00	-.05	.06
Brag	32	-.09	-.14	-.17	-.05
Competitive	52	.26	.31	.31	.34
Factor 12		.05	.02	.06	.12

This factor was omitted from the final scale and Phase 2 of this study.

Non-Factor Items: In addition to the original 12 factors, four non-factor items were retained for further evaluation from Study I. These were: Item 33, Unable to change from one task to another when asked to do so; Item 46, Likely to quit or give up when something is difficult; Item 47, Slow to complete his work; and Item 50, Inconspicuous in class and hard to get to know. While these four items were not related as a factor, the data concerning them was grouped for convenience of presentation. The data in Table 10 reveals that for Items 33, 46, and 47 there is a similar pattern of correlation with the original factors.

Table 10

Correlation of non-factor items with the 12 original factors

		Factors											
Items	Item No.	1	2	3	4	5	6	7	8	9	10	11	12
Unable to change	33	.51	.63	.43	.45	.40	.77	-.66	.76	.54	-.33	-.08	.10
Slow to complete work	47	.37	.52	.23	.27	.21	.66	-.59	.70	.34	-.33	-.17	-.12
Quits easily	46	.48	.66	.42	.50	.39	.74	-.63	.71	.49	-.38	-.08	.07
Inconspicuous	50	-.13	.03	-.11	-.08	.12	.25	-.26	.33	-.13	-.50	-.43	-.27

Item 50 was omitted from the final scale due to its inadequate relationship to the other items, to factors and to the IQ and achievement variables (see Table 11). The other three items were consistently related to Factors 2, 6, 7, and 8. Factors 6, External Reliance; 7, Comprehension; and 8 Inattentive-Withdrawn occurred as a broader family of behaviors in Study I. They involve behaviors which relate to the inability to learn and attend and inability to actively initiate a course of action without help. Factor 2 adds an element of inadequacy when self-initiation is in occurrence. Items 33, 47, and 46 add to the scale non-acting-out problem behaviors which are clearly related to lack of success in the academic sphere.

Table 11

Correlation of non-factor items to IQ and academic achievement

Items	IQ	Read	Eng.	Arith.
33	-.38	-.43	-.42	-.54
47	-.31	-.33	-.51	-.54
46	-.37	-.41	-.54	-.55
50	-.11	-.12	-.10	-.15

The final scale, with the necessary changes in items comprising each factor, was returned to the computer for Phase 2 of the study. At this point the scale was comprised of 11 factors (44 items) and three non-factor items, (see Appendix for final scale).

Phase 2

Normative data: The means and standard deviations for each of the final eleven factors and the three additional items are presented in Table 2. These data suggest that the results at different grade levels for each factor are quite similar, and do not point to a need for different norms at each level. The fact that the means at different grade levels are similar also indicates

Table 12

Means and standard deviations of DESB scores at each grade level and over the entire sample

	Grade Levels							
Factors	K	1	2	3	4	5	6	Total Sample
1	11.2(5.1)	9.7(4.4)	8.7(4.5)	10.3(4.9)	9.8(4.2)	9.7(4.4)	10.2(5.2)	9.9(4.7)
2	8.9(4.3)	9.6(4.7)	8.6(4.5)	10.0(4.7)	10.9(5.2)	10.2(4.6)	9.7(3.8)	9.7(4.6)
3	6.1(3.0)	5.2(2.0)	5.1(2.1)	5.9(2.9)	5.6(2.8)	6.3(3.1)	6.3(2.8)	5.8(2.7)
4	7.2(4.2)	5.6(2.8)	5.7(2.8)	7.1(4.5)	6.4(4.1)	6.5(3.7)	6.9(3.8)	6.5(3.8)
5	5.0[a](2.7)	9.4(5.0)	7.7(3.5)	8.2(3.9)	8.9(4.9)	9.9(4.3)	8.6(3.8)	8.3(4.3)
6	14.3(6.0)	13.4(5.7)	12.0(5.3)	13.0(7.0)	14.9(6.7)	13.8(5.8)	14.1(5.6)	13.7(6.1)
7	13.1(3.7)	13.1(3.9)	13.2(3.1)	12.9(3.9)	12.6(3.5)	13.0(3.7)	12.3(3.9)	12.9(3.7)
8	8.3(4.8)	9.7(5.5)	7.9(4.1)	9.1(5.5)	10.8(6.0)	9.4(4.6)	9.3(5.2)	9.3(5.2)
9	8.1(3.6)	7.9(3.1)	6.3(2.9)	7.4(3.0)	7.7(3.5)	8.0(3.5)	7.0(3.4)	7.5(3.3)
10	11.8(4.1)	11.5(4.2)	11.2(3.6)	11.6(3.9)	11.4(4.3)	11.9(3.5)	10.9(4.1)	11.4(4.0)
11	14.1(4.2)	15.3(5.1)	15.0(4.7)	14.4(4.9)	14.5(4.6)	14.9(4.3)	12.6(4.2)	14.4(4.7)
Additional Items								
33	2.3(1.4)	2.6(1.5)	2.2(1.4)	2.1(1.4)	2.7(1.8)	2.7(1.5)	2.4(1.5)	2.4(1.5)
46	2.6(1.8)	2.8(1.7)	2.1(1.4)	2.3(1.8)	2.7(1.9)	2.7(1.7)	2.7(1.6)	2.6(1.7)
47	2.5(1.7)	2.8(1.7)	2.1(1.6)	2.7(1.9)	3.1(2.1)	2.8(1.8)	2.8(1.9)	2.7(1.9)

[a] The kindergarten mean is small since only two of the four items can be rated (items 23 and 33). The other two items (22 and 31) relate to tests, and these are not given in kindergarten.

that, in rating, teachers do apply a "standard" for a given aged child. Considering the similarity of results at different grade levels, the factor (and additional item) means and standard deviations for the entire sample were employed in constructing the standard DESB Profile page.

Test-retest reliability and standard errors of measurement: Since a total of 128 children were rated a second time, approximately one week after the initial ratings, it was possible to compare the two sets of ratings. Table 13 presents means and standard deviations for each factor and additional item for each of the two ratings, the test-retest correlations, and the standard errors of measurement (SEM) for each factor and additional item.

Table 13

Test-retest means, correlations, and standard errors of measurement

	Means (SDs)		Test-retest	Standard Errors
Factors	Initial	Retest	Correlations	of Measurement
1	10.5 (4.9)	9.9[a](4.4)	.91	2.0
2	10.7 (5.0)	9.5[a](4.2)	.88	2.4
3	6.0 (3.0)	5.6[a](2.6)	.87	1.5
4	6.9 (3.9)	6.2[a](3.4)	.87	1.9
5	8.8 (4.5)	8.0[a](4.0)	.85	2.4
6	14.7 (6.4)	13.7[a](5.6)	.87	3.1
7	12.3 (3.6)	12.4 (3.4)	.86	1.8
8	10.2 (5.6)	9.6[b](4.9)	.89	2.6
9	7.8 (3.6)	7.6 (2.9)	.88	1.7
10	11.0 (3.8)	11.2 (3.7)	.87	1.9
11	13.8 (4.6)	14.2[b](4.4)	.89	2.1
Additional Items				
33	2.5 (1.6)	2.5 (1.5)	.72	1.1
46	2.7 (1.8)	2.3[a](1.4)	.80	1.3
47	2.9 (1.9)	2.7[b](1.8)	.71	1.1

[a] Significant at the .01 level.

[b] Significant at the .05 level.

Examination of Table 13 indicates that there was a general tendency for scores to decrease from the initial to the retest ratings one week later. Although statistically significant, the extent of these changes in scores is quite small in absolute terms. The test-retest correlations (i.e., reliabilities) of the factors are quite satisfactory, the median coefficient being .87. As a further refinement, the test-retest correlation for each item comprising the DESB was also determined. The median correlation was .76, with a quartile range of .72 to .82. The SEM's for each factor are quite small, suggesting that the scores obtained on a youngster at any one point in time are reasonably accurate estimates of the "true" scores for that child at the particular time. In general, all SEM's are equal to approximately one-half of the standard deviation of the scores for the total normative sample. This is a convenient finding, since it allows one to apply a simple rule-of thumb when assessing changes in a child's scores from one time to another. Any change which has a magnitude equal to or greater than the normative group standard deviation for that score is significant, or would occur by chance less than five times in one hundred instances.

Behavior and academic achievement: The data in Table 14 indicates the level of each of the behavior factors and additional items with reading and arithmetic achievement at each grade level. Examination of the data reveals that there is an overall relationship between classroom behavior and academic achievement. This finding is consistent with and confirms the results of the previous four studies using the DESB, in which high scores on factors 1, 2, 3, 4, 5, 6, 8 and 9 and low scores on factors 7 and 10 were significantly related to poor academic achievement. The high level of correlation between achievement and factors 6 (External Reliance), 7 (Comprehension) and 9 (Inattentive-Withdrawn) is consistent with the results of Study I. In general, academic grades in arithmetic are more highly related to the behavior factors than those in reading. This is particularly true for factors 5, 6, 7 and 8 in the sixth grade. However, with few exceptions, the correlations between both reading and arithmetic at each grade level are at the .05 and .01 levels.

Factor 5 (Achievement Anxiety) is related to academic performance in the upper grades suggesting a reaction which is not conducive to good achievement with the increase in the difficulty of academic material presented, particularly in arithmetic. Factor 11 (Need for Closeness to Teacher) shows the opposite trend, with a significant relationship with achievement only in the first two grades and particularly in reading. This suggests that in the first years of school the child who approaches and responds to the teacher in a warm and friendly manner is more apt to be academically successful. While this behavior was not found to be related to achievement in the middle and upper elementary grades, the results emphasize the importance of the teacher-child relationship upon performance in the initial school years.

Behavior scores and maturation (age) in first graders: In order to explore the question of the effect of maturation upon functioning in the first school year, the relationship between the age of the child at the time of rating and his scores on each of the behavior factors were examined for the kindergarten group (N = 101). The results indicate a significant correlation

Table 14

Relationship between factor and additional item scores and reading and arithmetic classroom achievement grades[a]

			Grade Levels					
Factors			1 R:N=53 A:N=53	2 R:N=73 A:N=50	3 R:N=106 A:N=106	4 R:N=131 A:N=53	5 R:N=86 A:N=39	6 R:N=87 A:N=122
1	Classroom Disturbance	R	-24	-22	-37	-28	-29	-21
		A	-30	-37	-20	-39	-40	-34
2	Impatience	R	-54	-30	-37	-29	-45	-10
		A	-54	-47	-27	-50	-43	-46
3	Disrespect-Defiance	R	-08	-14	-22	-22	-22	-27
		A	-20	-27	-11	-22	-26	-28
4	External Blame	R	-13	-20	-16	-21	-16	-27
		A	-07	-39	05	-22	-35	-28
5	Achievement Anxiety	R	-15	-09	00	-20	-05	-27
		A	03	-27	06	08	-50	-68
6	External Reliance	R	-77	-38	-59	-38	-51	-27
		A	-62	-47	-50	-35	-56	-68
7	Comprehension	R	89	50	77	45	63	25
		A	71	51	72	47	74	78
8	Inattentive-Withdrawn	R	-74	-37	-52	-30	-48	-15
		A	-65	-32	-49	-45	-63	-65
9	Irrelevant-Responsiveness	R	-39	-17	-40	-35	-07	-12
		A	-45	-36	-20	-37	-50	-25
10	Creative Initiative	R	60	41	39	42	35	21
		A	50	13	43	34	-04	55
11	Need Closeness to Teacher	R	51	46	-02	08	04	-05
		A	32	06	06	05	-01	21
	Additional items							
33	Change	R	-73	-29	-50	-33	-47	-19
		A	-58	-55	-45	-39	-68	-65
46	Quits	R	-74	-23	-52	-26	-43	-31
		A	-59	-52	-48	-55	-44	-67
47	Slow	R	-55	-24	-42	-20	-32	-25
		A	-44	-40	-49	-48	-57	-71

[a] Significant correlation values are:

N	.05	.01
50	.27	.35
70	.23	.30
100	.20	.25
125	.17	.23

between age and a more adequate response to the kindergarten environment after one-half of a year in the school program. Specifically, the correlation between age and level of over-reliance upon others in order to function (Factor 6) was -.25 (p = .01), with the younger child rated as more reliant upon the teachers and peers. The older child showed better comprehension of the day-to-day class activity (Factor 7), with r = .27 (p = .01), as well as more ability to creatively and appropriately initiate himself into the school program (Factor 10), r = .24 (p = .05). The younger child was described as more prone to quit when a task was difficult (Item 33) r = -.26 (p = .01), and slower in completing his work (Item 47), r = -.20 (p = .05). These results indicate, in short, that among a group of kindergarten youngsters with a mean age of five years, six months and a standard deviation of four months, older youngsters are more successful than their younger peers. Older kindergarten children are more able to function independently and are more prepared to cope effectively with the demands of the school situation, both emotionally and intellectually.

Sex differences in children: A further issue was the effect of sex differences upon classroom behavior. On nine of the eleven factors, boys were rated as presenting more problems and as less adequate than girls. Girls were rated as more prone to approach and be friendly toward the teacher (Factor 11) and as attaining higher comprehension scores (Factor 7). As a group boys were rated as more disturbing and disruptive, as less willing to wait for instructions or to go over work considered completed, more disrespectful, more prone to blame the teacher and the circumstances, and more anxious about meeting the demands of the classroom situation. All differences between boys and girls were highly significant (p = .01). The conclusion is that under the conditions as set up in the current elementary school program boys, clearly demonstrate more achievement impeding behaviors. Girls are far more often judged as conforming to and/or are capable of meeting the behavioral demands made upon them by the classroom situation. This conclusion further raises the broad issue of the sex role appropriateness of the entire orientation of present elementary school programing.

Sex differences in raters: In order to test the possibility that the sex differences among children (noted above) might be related, in part, to the sex of the rater, a comparison was made of the ratings of the male and female teachers. The possibility existed that the ratings on boys and girls differed because most of the ratings were done by female teachers. It was only possible to make a comparison at the fifth and sixth grade levels because none of the teachers below this level were males. The comparisons involved the ratings of four male and five female teachers. Generally, no differences were found between the ratings of male and female teachers on nine of the eleven factors. The two factors in which there were differences, factor 8, Inattentive-Withdrawn (male teachers' ratings were higher, p = .05) and factor 11, Need Closeness to Teacher (female teachers had higher ratings, p = .01), are not considered sufficient to draw conclusions concerning sex of rater differences. The conclusion is that the results for sex role differences in behavior among elementary school boys and girls is not ascribable to differences in the "standards" employed by male and female teachers in making their ratings, (i.e., the fact that most ratings were done by female teachers). The differences appear to be in the differential reaction of boys and girls to the overall school environment.

Birth order and behavior: The relationship between certain background variables and the behavior factors was also considered. The effect of birth order was assessed with comparisons made between the classroom behavior of oldest, youngest, middle and only children. This data is presented in Table 15. Of the six significant findings, in each case the oldest child was rated as demonstrating the least behavioral difficulty. The older child was described as less dependent upon the teacher (factor 6), having the highest comprehension score (factor 7), exhibiting less in the way of irrelevant responsiveness (factor 9), and greater positive, creative and appropriate self-initiation (factor 10). The oldest child was also rated as most flexible (Item 33) and least likely to quit when things got difficult (Item 46).

In five of these six findings, the middle child was rated as exhibiting the most problem behavior. While there is much research concerning the effect of sibling rank upon functioning, it is difficult to draw broad conclusions concerning achievement related behavioral difficulties and sibling rank. The current findings indicate that the oldest child in the family is most in tune with the school demands and expectations, while the middle child tends to display more difficulty meeting these demands than the oldest or youngest sibling in the family.

Parental age and education: The age and educational level of the parents was then considered. There were no significant findings relating age of parent and the child's behavior factor scores. Thus, the fact that a child had relatively older or younger parents did not appear to affect school behavior in any consistent fashion. The correlations between the number of years of education and the factor scores are presented in Table 16.

A general finding is that the higher the parental education, the lower the likelihood of behavioral difficulties and the greater the understanding of productive involvement in classroom activity. This is most striking at the fifth and sixth grade levels. Over all grade levels, however, the higher the educational level of the parent the less the child is rated as dependent upon the teacher (factor 6), and the greater the comprehension (factor 7) and creative iniative (factor 10). The conclusions are that the child from the family with better educated parents is more independent in his classroom functioning, better able to remain alert to the day-to-day material the teacher presents, and more prone to become personally involved in and motivated by the activities which lead to academic success.

Race and behavior: Within the total sample, 11 per cent of the youngsters were negro, and 88 per cent of the remaining youngsters were white. A comparison of the classroom behavior of the two groups reveals that negro youngsters were rated as demonstrating greater difficulties than their white peers in each of the areas studied. It was clear that under the present school programing this group of negro children was having much difficulty in coping with the demands for behavior made upon them.

However, when race was studied as a single variable, without the influence of other issues, the correlation between race and behavior was not significant.

Table 15

Means for each factor and additional item as a function of sibling order

	Sibling Order				F-value
Factor	No Sibs (N=38)	Oldest (N=209)	Middle (N=307)	Youngest (N=236)	
1 Class. Disturb.	9.9	9.5	10.2	9.9	0.9
2 Impatience	9.4	9.1	10.1	9.6	2.0
3 Disresp.-Defy.	5.8	5.6	5.8	5.8	0.3
4 Extern. Blame	6.5	5.8	6.7	6.5	2.3
5 Ach. Anxiety	8.3	8.0	8.4	8.4	0.5
6 Extern. Rely.	14.2	12.6	14.4	13.3	3.8[b]
7 Comprehension	12.7	13.6	12.3	13.1	5.2[b]
8 Inatt.-Withdr.	9.8	8.6	9.7	8.7	2.0
9 Irrel.-Resp.	8.3	6.9	7.7	7.5	3.0[a]
10 Creat. Iniat.	11.6	12.0	11.0	11.5	2.9[a]
11 N. Close to tr.	14.8	14.3	14.5	14.4	0.1
Additional items					
33 Change	2.4	2.2	2.6	2.3	3.3[a]
46 Quits	2.6	2.3	2.8	2.5	3.6[b]
47 Slow	3.0	2.6	2.7	2.7	0.5

[a] F test significant at .05 level

[b] F test significant at .01 level

Table 16

Relationships between parental education and factor and additional item scores, at each grade level

			Grade Levels						
Factor			K	1	2	3	4	5	6
1	Classroom Disturbance	Mo.	-.03	-.26[b]	-.08	.16	-.08	-.28[b]	.01
		Fa.	-.01	-.16	-.27[b]	.04	-.07	-.29[b]	-.29[b]
2	Impatience	Mo.	-.04	-.29[b]	-.12	-.10	.06	-.34[b]	-.08
		Fa.	-.21[a]	-.22[a]	-.42[b]	-.21[a]	-.01	-.26[b]	-.32[b]
3	Disrespect-Defiance	Mo.	-.01	-.11	-.03	.07	-.12	-.25[b]	.03
		Fa.	-.12	.01	-.21	.01	.02	-.23[a]	-.23[a]
4	External Blame	Mo.	-.10	.02	.00	.12	-.08	-.19	-.01
		Fa.	-.14	-.03	-.20	.09	.07	-.21[a]	-.14
5	Achievement Anxiety	Mo.	-.23[a]	-.04	-.14	.10	-.01	-.23[a]	-.30[b]
		Fa.	-.33[b]	-.04	-.35[b]	.03	.05	-.09	-.51[b]
6	External Reliance	Mo.	-.32[b]	-.18	-.17	-.21[a]	-.03	-.42[b]	-.30[b]
		Fa.	-.39[b]	-.17	-.46[b]	-.26[b]	-.06	-.36[b]	-.51[b]
7	Comprehension	Mo.	.22[a]	.20[a]	.35[b]	.26[b]	.17[a]	.47[b]	.25[b]
		Fa.	.25[a]	.24[a]	.42[b]	.34[b]	.25[b]	.29[b]	.46[b]
8	Inattentive-Withdrawn	Mo.	-.19	-.09	-.16	-.23[a]	.03	-.44[b]	-.34[b]
		Fa.	-.28[b]	.02	-.35[b]	-.21[a]	-.01	-.31[b]	-.47[b]
9	Irrelevant-Responsiveness	Mo.	-.06	-.14	-.17	.09	-.07	-.40[b]	-.07
		Fa.	-.15	-.12	-.41[b]	-.03	-.03	-.38[b]	-.17
10	Creative Initiative	Mo.	.24[a]	.11	.23[a]	.27[b]	.21[a]	.12	.38[b]
		Fa.	.32[b]	.10	.24[a]	.29[b]	.32[b]	.18	.41[b]
11	Need Closeness to Teacher	Mo.	.03	-.04	.05	.16	-.02	-.17	.20[a]
		Fa.	.15	-.02	-.02	.04	-.02	-.07	.21[a]
	Additional items								
33	Change	Mo.	-.26[a]	-.11	-.13	-.23[a]	.04	-.49[b]	-.22[a]
		Fa.	-.27[a]	.09	-.28[b]	-.16	-.04	-.33[b]	-.42[b]
46	Quits	Mo.	-.21[a]	-.14	-.09	-.23[a]	.02	-.21[a]	-.31[b]
		Fa.	-.30[b]	-.12	-.34[b]	-.19	-.03	-.14	-.48[b]
47	Slow	Mo.	-.33[b]	-.13	-.01	-.23[a]	.08	-.09	-.29[b]
		Fa.	-.33[b]	.00	-.28[b]	-.07	-.01	-.11	-.47[b]

[a] Significance value = .05

[b] Significance value = .01

After partialling out the effect of intelligence upon functioning, for instance, the level of relationship between race and behavior decreased to the point where it was evident that race per se had little to do with behavior. This result indicated that other variables must be operative to explain the higher ratings of the negro youngsters.

From a reexamination of the data one conclusion was that race differences stemmed from differences in parental educational level between the two groups. The mean years of education for the total group of 808 mothers and fathers was 12.6 and 13.3 years, respectively. The years of education of the parents of negro children showed both parents to have attained eleven and one-half years of education. The discrepancy between the fathers of the two races was two years and mothers over one year in favor of the white parents. The data presented in Table 16 revealed that the lower the parental education the greater the occurrence of behavioral difficulties among the children. Further, those behavior factors most affected by parental education were identical to those behavior factors most related to race (prior to partialling out the influence of IQ).

Family size and behavior: The relationship between family size and behavior difficulties further explains the racial difference issue, as well as reveals the fact that youngsters from very large families demonstrate greater school problems than their peers from smaller families. The data presented in Table 17 compares the mean scores for each behavior factor for families with from one to five or more children. On nine of the eleven factors and all three additional items the evidence is clear. Children with four or more siblings are displaying significantly greater behavior described as disturbing, impatient, disrespectful, anxious, overly-reliant, low in comprehension, inattentive, irrelevant and non-creative. They have greater difficulty accepting change in routine, tend to quit and are slow to produce work in class. It is also of interest that "only children" (no siblings) tend to be rated as showing more problem behaviors than all but the youngsters with four or more siblings on factors tapping over-reliance upon the teacher (factor 6), lower comprehension (factor 7) and greater irrelevant-responsiveness (factor 9).

The relationship between family size and race is dramatized by the data in Table 18 which compares the per cent of negro and white children having none, one, two, three, and four or more siblings. Forty-five per cent of the negro sample studied came from families in which there are five or more children. Thus, the conclusion drawn from this data is that youngsters with four or more siblings are having greater school difficulty than their smaller family peers, and that in this group there is a disproportionately large number of negro children. The most parsimonious explanation of the family size data is that children whose parents are less well educated, and who are at the lower socio-economic rungs of the ladder, exhibit more behavior problems in the classroom.

Table 17

Means for each factor and additional item as a function of number of siblings in the family

Factor		Number of Siblings					F-value
		0	1	2	3	4+	
		(N=39)	(N=182)	(N=218)	(N=199)	(N=161)	
1	Class. Disturb.	10.0	9.5	9.8	9.6	11.0	2.5[a]
2	Impat.	9.7	8.8	9.8	9.2	11.3	7.4[b]
3	Disresp.-Defy.	5.8	5.6	5.5	5.7	6.4	2.6[a]
4	Extern, Blame	6.6	6.0	6.2	6.7	7.0	2.0
5	Ach. Anxiety	8.6	8.1	7.8	8.4	9.1	2.3[a]
6	Extern. Rely.	14.2	12.6	13.2	13.0	16.1	9.2[b]
7	Comprehension	12.7	13.7	13.0	13.5	11.2	12.7[b]
8	Inatt.-Withdr.	9.9	8.3	9.3	8.4	10.9	7.3[b]
9	Irrel.-Resp.	8.4	7.0	7.4	7.2	8.3	5.0[b]
10	Creat. Iniat	11.6	12.1	11.6	11.6	10.1	6.0[b]
11	N. Close to tr.	14.9	14.5	14.3	14.4	14.3	0.2
	Additional items						
33	Change	2.5	2.2	2.4	2.3	3.0	6.9[b]
46	Quits	2.6	2.4	2.4	2.4	3.2	6.2[b]
47	Slow	3.0	2.6	2.7	2.5	4.0	2.3[a]

[a] F test significant at .05 level
[b] F test significant at .01 level

Table 18

A comparison of the per cent of negro and white children by the number of siblings in the family

Number of Siblings	White N = 720 %	Negro N = 88 %
None	5	7
1	24	11
2	25	18
3	17	17
4+	17	45

SUMMARY AND CONCLUSIONS

The DESB is a scale which can be reliably used in grades one through six to identify children with behavior problems inimical to successful achievement. The fact that no differences were found between the behavior ratings made by male and female teachers further supports the Scale's usefulness in all elementary school grades. The findings indicate that the eleven factors and three additional items are significantly related to academic achievement. The specific conclusions are that when kindergarten youngsters are studied as a group, the older children show less behavioral difficulty and better understanding of the day-to-day material than the younger children in the class; throughout the school grades boys have more behavior problems than girls; the oldest child in the family is the least likely to be rated as showing behavior which interferes with learning, while, to a lesser degree, the middle sibling (of three or more children) is most likely to have difficulty; and children from large families with four or more siblings have greater difficulty with the demands of the school situation than peers from smaller families.

In addition, the educational level of the parents is a significant variable in that the lower the parental education, the greater the likelihood of school difficulties in the offspring. In the community studied, the negro sample had a large number of parents with less than a high school education (mean 11.6 years) and half of the negro youngsters came from families with five or more children. Thus, while the negro children as a group present more school problems, it is clear that the color of skin is not the significant variable, but rather the related socio-economic and educational variables.

In short, the data indicate that the most successful youngster, in terms of acceptable and productive classroom behavior, is a girl, the oldest child from a family with two to four youngsters, with more highly educated parents. Boys from large families and with parents of less than a twelfth-grade education have the greatest difficulties meeting the school's expectations. This suggests that in order to effectively meet the needs of children who are responding unproductively to the present methods of education, it is necessary to examine and to modify the current school environment.

OVERALL SUMMARY

This series of studies examined the nature and organization of non-test, academic achievement related classroom behaviors from kindergarten through 12th grade, and developed rating scales that a teacher can employ to reliably describe these behaviors in a standard fashion. Research involved normal public school and "special" class students of both sexes.

Most of the research effort focused upon the measurement of behaviors from kindergarten through 6th grade. Behaviors were selected out of teacher conferences, scale items constructed, ratings made by teachers, factor analyses performed, and behaviors related to age, sex, IQ, academic achievement, clinical diagnosis, academic subject, grade level, sex of teacher-rater, age and educational level of parents, sibling status, and race of child. Norms and test-retest data were obtained, and comparisons made between academic achievers and non-achievers, and between "normal" and "special" classes. In all, 147 teachers made 1719 ratings on a total of 1546 children.

The resulting scales are feasible to use. A Manual for the elementary scale has been devised with instructions for use and interpretation.

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Appendix

DEVEREUX ELEMENTARY SCHOOL BEHAVIOR (DESB) RATING SCALE

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RATING GUIDE

1. Base rating on student's recent and current behavior.	Consider only the behavior of the student over the past month.
2. Compare the student with normal children his age.	The standard for comparison should be the average youngster in the normal classroom situation.
3. Base rating on your own experience with the student.	Consider only your own impression. As much as possible, ignore what others have said about the student and their impressions.
4. Consider each question independently.	Make no effort to describe a consistent behavioral picture or personality. It is known that children may show seemingly contradictory behavior.
5. Avoid interpretations of "unconscious" motives and feelings.	As much as possible, base ratings on outward behavior you actually observe. Do not try to interpret what might be going on in the student's mind.
6. Use extreme ratings whenever warranted.	Avoid tending to rate near the middle of all scales. Make use of the full range offered by the scales.
7. Rate each item quickly.	If you are unable to reach a decision, go on to the next item and come back later to those you skipped.
8. Rate every question.	Attempt to rate each item. If you are unable to rate a particular item because it is not appropriate to the child in question, or because of lack of information, circle the item number.

Student________________________ Rater's Name________________________

Student's Sex________________________ Academic Subject________________________

Grade__________ School________________

YOU ARE GOING TO RATE THE OVERT BEHAVIOR OF A STUDENT. FOR ITEMS (1-26), USE THE RATING SCALE BELOW. WRITE YOUR RATING (NUMBER) FOR EACH ITEM IN THE ( ) TO THE LEFT OF THE ITEM NUMBER.

Very frequently	Often	Occasionally	Rarely	Never
5	4	3	2	1

COMPARED WITH THE AVERAGE CHILD IN THE NORMAL CLASSROOM SITUATION, HOW OFTEN DOES THE CHILD...

( ) 1. Start working on something before getting the directions straight?

( ) 2. Say that the teacher doesn't help him enough (i.e., won't show him how to do things, or answer his questions)?

( ) 3. Bring things to class that relate to current topic (e.g., exhibits, collections, articles, etc.)?

( ) 4. Tell stories or describe things in an interesting and colorful fashion (e.g., has an active imagination, etc.)?

( ) 5. Speak disrespectfully to teacher (e.g., call teacher names, treats teacher as an equal, etc.)?

( ) 6. Initiate classroom discussion?

( ) 7. Act defiant (i.e., will not do what he is asked to do, says: "I won't do it")?

( ) 8. Seek out the teacher before or after class to talk about school or personal matters?

( ) 9. Belittle or make derogatory remarks about the subject being taught (e.g., "spelling is stupid")?

( ) 10. Get the point of what he reads or hears in class?

( ) 11. Have to be reprimanded or controlled by the teacher because of his behavior in class?

( ) 12. Poke, torment, or tease classmates?

( ) 13. Annoy or interfere with the work of his peers in class?

( ) 14. Tell stories which are exaggerated and untruthful?

( ) 15. Give an answer that has nothing to do with a question being asked?

( ) 16. Break classroom rules (e.g., throw things, mark up desk or books, etc.)?

( ) 17. Interrupt when the teacher is talking?

( ) 18. Quickly lose attention when teacher explains something to him (e.g., becomes fidgety, looks away etc.)?

Very frequently	Often	Occasionally	Rarely	Never
5	4	3	2	1

COMPARED WITH THE AVERAGE CHILD IN THE NORMAL CLASSROOM SITUATION, HOW OFTEN DOES THE CHILD... :

( ) 19. Offer to do things for the teacher (e.g., erase the board, empty the pencil sharpener, open the door, get the mail, etc.)?

( ) 20. Makes you doubt whether he is paying attention to what you are doing or saying (e.g., looks elsewhere, has blank stare or faraway look, etc.)?

( ) 21. Introduce into class discussion personal experiences or things he has heard which relate to what is going on in class?

( ) 22. Get openly disturbed about scores on a test (e.g., may cry, get emotionally upset, etc.)?

( ) 23. Show worry or get anxious about knowing the "right" answers?

( ) 24. Look to see how others are doing something before he does it (e.g., when teacher gives a direction, etc.)?

( ) 25. Complain teacher never calls on him (e.g., that teacher calls on others first, etc.)?

( ) 26. Make irrelevant remarks during a classroom discussion?

FOR ITEMS 27 - 47 USE THE RATING SCALE BELOW:

Extremely	Distinctly	Quite a bit	Moderately	A little	Very slightly	Not at all
7	6	5	4	3	2	1

COMPARED WITH THE AVERAGE CHILD IN THE NORMAL CLASSROOM SITUATION, TO WHAT DEGREE IS THE CHILD...

( ) 27. Unable to change from one task to another when asked to do so (e.g., has difficulty beginning a new task, may get upset or disorganized, etc.)?

( ) 28. Oblivious to what is going on in class (i.e., not "with it," seems to be in his own "private" closed world)?

( ) 29. Reliant upon the teacher for directions and to be told how to do things or proceed in class?

( ) 30. Quickly drawn into the talking or noise-making of others (i.e., stops work to listen or join in)?

Extremely	Distinctly	Quite a bit	Moderately	A little	Very slightly	Not at all
7	6	5	4	3	2	1

COMPARED WITH THE AVERAGE CHILD IN THE NORMAL CLASSROOM SITUATION, TO WHAT DEGREE IS THE CHILD...

( ) 31. Outwardly nervous when a test is given?

( ) 32. Unable to follow directions given in class (i.e., need precise directions before he can proceed successfully)?

( ) 33. Sensitive to criticism or correction about his school work (e.g., gets angry, sulks, seems "defeated", etc.)?

( ) 34. Prone to blame the teacher, the test, or external circumstances when things don't go well?

( ) 35. Able to apply what he has learned to a new situation?

( ) 36. Sloppy in his work (e.g., his products are dirty or marked up, wrinkled, etc.)?

( ) 37. Likely to know the material when called upon to recite in class?

( ) 38. Quick to say work assigned is too hard (e.g., "you expect too much", "I can't get it", etc.)?

( ) 39. Responsive or friendly in his relationship with the teacher in class (vs., being cool, detached, or distant)?

( ) 40. Likely to quit or give up when something is difficult or demands more than usual effort?

( ) 41. Slow to complete his work (i.e., has to be prodded, takes excessive time)?

( ) 42. Swayed by the opinion of his peers?

( ) 43. Difficult to reach (e.g., seems preoccupied with his own thoughts, may have to call him by name to bring him out of himself)?

( ) 44. Unwilling to go back over his work?

COMPARED WITH THE AVERAGE CHILD IN THE NORMAL CLASSROOM SITUATION, TO WHAT DEGREE DOES THE CHILD...

( ) 45. Like to be close to the teacher (e.g., hug or touch the teacher, sit or stand next to teacher etc.)?

( ) 46. Have difficulty deciding what to do when given a choice between two or more things?

( ) 47. Rush through his work and therefore make unnecessary mistakes?

Appendix

Name of Student____________________

DEVEREUX JUNIOR-SENIOR HIGH SCHOOL BEHAVIOR (DHSB) RATING SCALE*

Marshall Swift, Ph.D. and George Spivack, Ph.D.

The Devereux Foundation Institute for Research and Training
Devon, Pennsylvania

RATING GUIDE

1. Base rating on student's recent and current behavior.	Consider only the behavior of the student over the past month.
2. Compare the student with normal children his age.	The standard for comparison should be the average youngster in the normal classroom situation.
3. Base rating on your own experience with the student.	Consider only your own impressions. As much as possible, ignore what others have said about the student and their impressions.
4. Consider each question independently.	Make no effort to describe a consistent behavioral picture or personality. It is known that children may manifest seemingly contradictory behavior.
5. Avoid interpretations of "unconscious" motives and feelings.	As much as possible, base ratings on outward behavior you actually observe. Do not try to interpret what might be going on in the student's mind.
6. Use extreme ratings whenever warranted.	Avoid tending to rate near the middle of all scales. Make use of the full range offered by the scales.
7. Rate each item quickly.	If you are unable to reach a decision, go on to the next item and come back later to those you skipped.
8. Rate every question.	Attempt to rate each item. If you are unable to rate a particular item due to lack of information, circle the item number.

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Name of Student ______________________ Teacher's Name ______________ Subject ________

Student's Sex ______ Birthdate ____________ Grade and School ______________________

Date of Rating ______________________ Mark Achieved ______________________

YOU ARE GOING TO RATE THE OVERT BEHAVIOR OF A STUDENT. FOR ITEMS 1 - 22, USE THE RATING SCALE BELOW. WRITE YOUR RATING (NUMBER) FOR EACH ITEM IN THE ( ) TO THE LEFT OF THE ITEM NUMBER.

Very frequently	Often	Occasionally	Rarely	Never
5	4	3	2	1

COMPARED WITH THE AVERAGE CHILD IN THE NORMAL CLASSROOM SITUATION, HOW OFTEN DOES THE CHILD......

( ) 1. Tell the teacher he is not capable of doing the work expected (i.e., underestimate his ability)?

( ) 2. Bring up other points of view in class so that they may be explored or discussed?

( ) 3. Ask questions in order to get more information about a subject?

( ) 4. Complain that the work is too hard?

( ) 5. Raise his hand to answer a question, or volunteer information?

( ) 6. Act physically restless in class or unable to sit still?

( ) 7. Critical (in a negative way) of the peers' opinions, questions or work in class?

( ) 8. Bring things to class that relate to a current topic?

( ) 9. Come in late to class?

( ) 10. Do more work than he is assigned (i.e., carries assignments beyond the minimal requirement)?

( ) 11. Express the feeling that too much work has been assigned?

( ) 12. Annoy or interfere with the work of his peers in class?

( ) 13. Speak disrespectfully to the in class?

( ) 14. Participate actively in classroom discussion?

( ) 15. Have his work poorly organized (e.g., class notes, written assignments, etc.)?

( ) 16. Criticize, belittle or make derogatory remarks concerning the importance of the subject matter of the course?

( ) 17. Come to class having lost, forgotten or misplaced his books, pencil or other necessary class material?

( ) 18. Seem overly concerned that he has the correct directions (e.g., will check an assignment with a teacher after class, will ask that a direction be repeated or clarified, etc.)?

( ) 19. Fail to turn in assignments on time?

( ) 20. Engage the teacher in conversation just before or after class, (e.g., about subject matter of courses, or mutual interests)?

( ) 21. Come up with original or unique thoughts in class which

( ) 22. Have to be reprimanded or controlled by the teacher because of his behavior in class?

FOR ITEMS 23 - 42 USE THE RATING SCALE BELOW

Extremely	Distinctly	Quite a bit	Moderately	A little	Very slightly	Not at all
7	6	5	4	3	2	1

COMPARED WITH THE AVERAGE CHILD IN THE NORMAL CLASSROOM SITUATION, TO WHAT DEGREE IS THE CHILD.....

( ) 23. Liked by you as a person?

( ) 24. Outwardly nervous about taking tests?

( ) 25. Effective in applying a new principle he has learned to a new or unfamiliar problem?

( ) 26. Likely to quit or give up when something is difficult or demands more than usual effort on his part?

( ) 27. Reliant upon the teacher for directions and to be told how to do things or proceed in class?

( ) 28. Responsive or friendly in his relationship with the teacher in class (vs. being cool, detached or distant)?

( ) 29. A compulsive talker (i.e., can't refrain from talking to classmates)?

( ) 30. Quick to grasp a new concept that you present in class?

( ) 31. Prone to want the teacher to do all the work for him, or make things easy for him?

( ) 32. Swayed by the opinions of his peers in his class?

( ) 33. Very quiet, uncommunicative, responds to questions with monosyllables or a gesture?

( ) 34. Effective in making inferences and working out answers for himself, when given the facts?

( ) 35. Oblivious to what is going on in class - is not "with it" - seems to be in his own "private" closed world?

( ) 36. Inconspicuous in class (you could easily forget he is there)?

( ) 37. Prone to feel he must master all of the details before he is satisfied he knows it?

( ) 38. Dogmatic or opinionated in the way he thinks?

( ) 39. Prone to want quick, "black" or "white" answers to questions?

( ) 40. Openly nervous during class (e.g., is physically tense, voice quivers or fearful of teacher or classmates, etc.)?

( ) 41. Not receptive to other's opinions (e.g., doesn't "listen", interrupts others, etc.)?

( ) 42. Able to sift out the essential from the unessential in what he reads or hears in a lecture?

FOR ITEMS 43 - 45, USE THE RATING SCALE BELOW:

Extremely	Distinctly	Quite a bit	Moderately	A little	Very slightly	Not at all
6	6	5	4	3	2	1

COMPARED WITH THE AVERAGE CHILD IN THE NORMAL CLASSROOM SITUATION, TO WHAT DEGREE DOES THE CHILD.....

( ) 43. Fluster, "block", or become ill at ease when expressing himself

( ) 44. Lack social interaction with peers in class?

( ) 45. Prepare homework or project assignments in an interesting and original fashion?